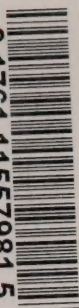


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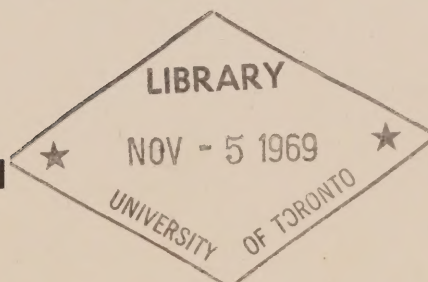
Canada

RAE — LAC LA MARTE

AN AREA ECONOMIC SURVEY



INDUSTRIAL DIVISION



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**NORTHERN ADMINISTRATION BRANCH
DEPARTMENT OF INDIAN AFFAIRS
AND NORTHERN DEVELOPMENT**

RAE - LAC LA MARTRE

an area economic survey

1966

A. E. S. R. #66/2

by

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with contributions by
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The opinions expressed in this report are those of the author and not necessarily those of the Department of Indian Affairs and Northern Development.

Industrial Division
Department of Indian
Affairs and Northern
Development.

Ottawa, June 1969.

PREFACE

This report is one of a series of Area Economic Surveys carried out by the Industrial Division of the Department of Indian Affairs and Northern Development.

These surveys are a continuing part of the Department's efforts to determine the basis for local economic and social progress and regional planning in the Northwest Territories. Basically the surveys are intended to:


- 1) Assess the renewable resources as to their ability to sustain the local population.
- 2) Determine the degree of exploitation of these resources and the efficiency of their use.
- 3) Investigate and explain the social and economic factors affecting resource utilization.
- 4) Recommend ways and means whereby the standard of living of the local people might be improved.

As the reasons for these surveys are practical, the material presented in the reports is selected for its relevance in this respect; much academic material gathered in the course of the investigation which may have been taken into account in the deliberations is necessarily excluded from these reports. On the other hand, authors have been given wide latitude in their approach and have been encouraged to give consideration to key problems of a theoretical nature and to include such theoretical argument where its inclusion is thought to contribute to the understanding of the material presented and of the practical conclusions drawn.

The reports are published primarily for use within the Department, for distribution to other interested government agencies and for limited distribution to libraries, universities and organizations and individuals actively engaged in northern research, administration or development.

The following reports in this series have been published to date or are in preparation:

<u>A. E. S. R. #</u>	<u>Title</u>	<u>Author</u>
58/1	Ungava Bay	J. Evans
60/1	The Squatters of White-horse	J. Lotz
62/1	Southampton Island	D. Brack
62/2	Tuktoyaktuk-Cape Parry	G. Abrahamson
62/3	Western Ungava	R. Currie
63/1	The Copper Eskimos	G. Abrahamson



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63/2	Keewatin Mainland	D. Brack and D. McIntosh
63/3	Yukon Territory Littoral	R. Currie
65/1	Banks Island	P. Usher
65/2	Northern Foxe Basin	G. Anders
66/1	The Mackenzie Delta (2 Vol)	D. Bissett
66/2	Rae-Lac La Martre	G. Anders
66/3	Frobisher Bay	S. MacBain (Miss)
66/4	East Coast-Baffin Island	G. Anders, Ed.
67/1	Lancaster Sound	D. Bissett
67/2	South Coast - Baffin Island	G. Higgins
67/3	South Shore-Great Slave Lake	D. Radojicic; G. Anders, Ed.
67/4	Central Mackenzie	D. Villiers (Miss)
68/1	Central Arctic	D. Villiers (Miss)
68/2	Keewatin Mainland Re-appraisal	D. Radojicic
68/3	Lower Liard Region	G. Higgins



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CHAPTER 1

INTRODUCTION

A. SCOPE OF SURVEY

Within the basic framework laid down for all Area Economic Surveys in this series, as summarized in the Preface, the following problems were to be the specific major aims of the Rae - Lac La Martre Survey:

- 1) This survey was to cover the geographic, economic and historical factor having a bearing upon the current state of economic and social development of the tribe of the Dogrib Indians. It was to describe and analyse the development potential of the area traditionally occupied or hunted over by this tribe with particular attention to be paid to the possibilities of maximizing Dogrib participation in development programmes.
- 2) The implications of the contemplated move of the townsite of Rae were to be considered in depth as well as the development prospects - or the lack of them - of the other permanent communities of the tribe and recommendations made regarding their expansion or eventual relocation.
- 3) Road construction in the area, particularly in relation to potential hydro-developments and to the expansion of tourism was to be gone into in some detail and the problem complex of tourism expansion - indigenous fisheries development - local social development investigated and commented upon.
- 4) Finally, the utilization by the Dogrib Indians of external employment opportunities was to be considered if it should appear that local development prospects for a population of the size under investigation were too limited to hold out a reasonable hope for the achievement of a massive improvement in their material living standard in the near future.

B. BOUNDARIES

The boundaries of the survey area were accordingly defined as follows: Approximately from Trout Rock Island in the North Arm of Great Slave Lake in a fairly straight line in a north-easterly direction to the east end of Winter Lake, from there turning due north over Little Marten Lake to Point Lake, turning north-west towards Echo Bay at Great Bear Lake, following the shore of Great Bear Lake south-westwards to the south end of McVicar Arm and from there in a long south-easterly sweep bulging to the west in order to take in the Horn Plateau via Willow Lake back to Trout Rock Island. (See Map #1)

As the area was defined as the hunting, fishing and trapping grounds utilized by the Dogrib Indians at present and during the recent past, these boundary lines are to some extent arbitrary as boundary lines delimiting land-use areas of nomadic or semi-nomadic peoples following a primitive hunting and fishing economy usually are. Thus, for instance, there is in the south-east some overlap with the

trapping and hunting areas of the Hare Indians of the Central Mackenzie while in the North East the actual land-use area might be said to ultimately be limited by the edge of the open tundra into which the Dogrib venture occasionally for very short periods. In the South, the Yellowknife area was excluded, though there are quite a few Dogribs living in the town and though a case could be made that it belongs technically to Dogrib territory, the economic connection between Yellowknife and the more traditional Dogrib communities that were the object of the survey is at present tenuous enough to warrant this exclusion. A detailed study of Yellowknife itself, which still remains valid, is moreover contained in L.S. Bourne : "Yellowknife, N. W. T., a study of its urban and regional economy", published by the Northern Co-ordination and Research Centre. The location of the survey area is shown on Map # 1.

C. FIELDWORK

Preliminary research for the survey was carried out by the author in the early spring of 1966. The fieldwork for the survey was carried out from late May to early July by the author and Mr. J. Morisset and from early July to early September by Mr. Morisset alone. In the course of the fieldwork all Indian camps in the survey area were visited, most of them repeatedly, and most of the area was covered on the ground, by canoe and by small charter plane (mostly float equipped Otters or Cessnas), to obtain good first hand information of most traditional resource-harvesting activities and of the most frequented traditional communication routes. Further background and library research was carried out in the fall and winter of 1966/67 and the material collected worked up into the present report during the summer and winter of 1967.

D. ACKNOWLEDGEMENTS

Many people and organizations contributed in various ways to the success of this survey. Special recognition is due to the efforts of Mr. Jean Morisset, who contributed significant proportions of the drafts for many of the chapters included, as indicated in the table of contents, whose stimulating comments often helped to clarify cloudy issues and whose cheerful gallic temperament made the whole work an enjoyable personal experience.

The co-operation and assistance of the following are gratefully recognized:

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CHAPTER 2

THE PHYSICAL GEOGRAPHY

A. THE GENERAL GEOGRAPHY OF THE AREA

The traditional land-use area of the Dogrib Indians lies east of the Mackenzie River system between Great Slave Lake and Great Bear Lake, covering an approximately 200 mile wide belt which is nearly parallel with the Pacific coast line.

The western, northern and southern boundaries of this area are fairly easy to define - the western one running more or less parallel to the Mackenzie River from the South end of McVicar Arm of Great Bear Lake to Willow Lake, from where the southern boundary runs approximately due East to the shore of the North Arm of Great Slave Lake while the northern boundary is constituted by the southern and south-eastern shore of Great Bear Lake. The eastern boundary, on the other hand, is extremely irregular and indented, depending upon the accessibility by river of a number of small hunting areas generally linked to some specific lake (Snare Lake, Rawalpindi Lake), following in some areas the tree line and bending southwards back towards Great Slave Lake North Arm along an undefined line between the Wecho and Yellowknife rivers.

The area of the Dogribs is everywhere fully within the Subarctic - even though its eastern edge extends to the Barrens, which form the boundary. This is because the Dogribs are fundamentally a people of the boreal forest. Their orientation is continental, as even the approaches to the sea are far beyond their territory.

Although not outstanding in their differentiation, a variety of landscapes is included in the area. The area straddles the dividing line between two of the major physiographic subdivisions of northern Canada: the Precambrian Shield and the Mackenzie Lowlands, a sedimentary basin as level as the prairies which are its southern continuation.

The chain of lakes between Great Bear Lakes McTavish Arm and Great Slave Lakes North Arm constitutes the boundary between the two dominant landforms of the area: the Precambrian Shield uplands to the East and the limestone underlain plateaus to the West. The former are not very different from the Shield landscapes of southern Ontario and Quebec with rounded granitic outcroppings as the most noticeable features and differences in elevation reaching 1000 feet (800' to 1900' abs. altitudes) while the latter are frequently covered by extensive moors, often, as in the north-west corner of Lac La Martre with their 15' to 30' high peat shores presenting a vivid picture of the moors' encroachment of a lake.

B. THE PHYSIOGRAPHY

The area contains parts of the following major physiographic provinces:



— Approximate Contact : Precambrian / Interior Plains.

- - - Boundaries of Major Physiographic Provinces.

— Approx. Boundaries of Physiographic Regions.

MAP 2 :

PHYSIOGRAPHY

Border Region

Plains Province

- a) Great Bear Plain
- b) Great Slave Plain

Shield Region

Slave Province

- c) Slave Upland

Bear Province

- d) Bear Upland

After Map #15 "Physiographic Units"
in 'Atlas of the N. W. T. '

- a) Great Bear Plain: Mainly composed of Mesozoic strata, the rolling surface of this plain lies generally below 1,000 feet with several small plateaus and hills rising a little above this elevation.
- b) Great Slave Plain: The central part, containing the plateau of the Horne Mountains, which is underlain by Mesozoic strata, rises to a mean elevation of 2,500 feet, while the rest, which is largely underlain by Paleozoic sedimentary rocks, is generally below 1,000 feet in elevation.
- c) Slave Upland: This contains outcroppings of some of the oldest Precambrian rocks in Canada. The highest part is more than 2,000 feet above sea level with local relief of about 400 feet. Generally its rolling, hilly surface is similar to that of other great stretches of massive crystalline Precambrian rocks of the Canadian Shield. The western border is on the whole continuous with the Bear Upland.
- d) Bear Upland: On and beyond the north-eastern border of the survey region, beginning at the Coppermine Valley, the Bear Upland comprises some of the oldest stratified Precambrian rocks. Further south, that is within the survey area, massive gneissic rocks are dominant, and the landscape shows their characteristic rounded rocky hills with a local relief of only a few hundred feet in most places though exceeding 1,000 feet in some a few absolute elevations reach 1,600 feet.

These provinces can be broken down into the following smaller physiographic units. Much of this following material is summarized for the purpose of this survey from Rand Report RM-2122-1PR, as far as it relates to the northern and northwestern portions of the area. Some areas have been described which are outside the survey area proper. They were included because members of the Dogrib tribe frequently travel into them for hunting or trapping - generally to obtain caribou in areas beyond the northern fringe of the survey area, or to trap beaver in the Cartridge Mountain and marten in the Horn Mountain area.

The Contwoyto Till Plateau: The plateau has developed on a single high upland surface. The total height range lies between 1,300 and 1,700 feet with local relief rarely exceeding 200 feet. Where the local relief manifests itself in rock outcrops, there may be very abrupt micro-relief and steep slopes but generally the terrain has a gently rolling flat surface. Over 60 per cent of the surface is glacial drift with a clay-silt matrix but some rock areas may have a cover of felsenmeer or ground moraine boulder fields. The large sector between Credit Lake and Mesa Lake is distinguished by a concentration of eskers and a large number of drumlins. This formation fans out westwards and then ends abruptly at about 115° 30' W longitude. (CTP)

The lakes show a marked linear component which could prove a serious barrier to northwest - southwest land travel. The Esker network is more closely concentrated in the southern sector than in any other region.

The Great Bear Plateau: The Great Bear Plateau shows the typical landforms of a granitic shield area. Rock knobs with concordant summit heights mark an upper erosion surface with occasional monadnocks, while the perimeter is deeply dissected in some parts by rivers cutting down to lower base levels. The region has maximum heights of 1,800 feet, with the general surface elevation being about 1,400 feet. This surface declines gently southwards to approximately 1,000 feet, but in the west there is an abrupt fall at the boundary to 515 feet on Great Bear Lake. Areas of non-granitic rocks are to be found within this region, the most important being that around Conjuror Bay with relief up to 600 feet while the true granitic areas usually have moderate relief of 100 to 200 feet. The local relief in the region is generally rugged in form and the average is substantially exceeded in the fiord region on the Great Bear Lake shore where it can reach 1,000 feet. Some of the rivers draining to the southwest border formed by the Camsell River have cut quite deep valleys.

The region may then briefly be divided into two sectors. In the central and eastern parts, relief is gently rolling with subdued rock knob forms standing out whereas near the western and southwestern margins, increased incision gives much greater relief, often rugged, and all of it below the general surface. The boundary to the west is steep, with a bluff overlooking Great Bear Lake, but in the southwest there is a confused area of valleys descending to a river with base levels descending from 800 feet at Faber Lake to 515 feet on Great Bear Lake. Most of the surfaces encountered are of bedrock and there is less than 10 per cent drift cover in most areas, although there are some drift floored valleys in the southwest. There are some small eskers deposited at widely scattered sites and in the southwest only, there are a few gravel deposits in raised beaches along the Camsell River Lake system. (GBP)

The Emile Ridges: In the Emile River region sedimentary rocks and lavas overlying the granite have formed an elongated area of rugged ridge terrain running in north-south direction. The relief can - over very short east-west distances - exceed 600 feet. These high elevations approximate the height of

the Great Bear Plateau at 1350 feet, which forms the eastern border and has, though generally lying at greater elevation, shows much less relief.

The region is difficult to cross overland in an east-westerly direction except where the Emile breaks through, forming a series of Lakes. The ridges are serious obstacles in themselves but also, in the north, where the sedimentary cover is complete, the valleys are filled by long, north-south oriented lakes. In the south, the lakes in exposed granitic areas are smaller and more rounded while the ridges themselves are less obvious and more widely spaced. On the whole, there is very little drift anywhere in the region. (ER)

The Indin Hills: This is an extremely rugged region in a belt of faulted lavas and sedimentary rocks. Local relief of 500 feet is common between steep-sided ridges of bedded sedimentary rocks and even higher flat-topped ridge areas where lava/flows have formed erosion resistant caps. (IH)

There is very little fine drift in this region, most loose materials being scattered ground moraine or shattered bedrock in situ. A few sand deposits are found in the southern part. The region as a whole shows no consistent directional patterns in its landforms and the relief is higher than the surrounding Great Bear Upland.

The Snare Lake Trough: Snare Lake and Roundrock Lake lie in a shallow trough cut into the upland surface by which all drainage is directed south and west into the Snare River system. The trough is only 200 feet below the base levels of the upper systems but the lakes are over 500 feet below the highest ground north and south. The trough is asymmetrical in section with steep slopes to the north and a much more gentle rise, broken by occasional hills on the south.

The trough is cut into the Shield granites, but considerable amounts of drift have modified the scene and it cannot be described as rock knob terrain except near the east end of the trough where many streams drain rapidly down the slopes of the upland surface in a series of rapids to Winter Lake. The major lakes are sand-floored with sandy beaches and shore terraces, the sand probably being reworked esker material. (SLT)

The Acasta Drift Hills: They constitute a region peripheral to the Contwoyto Till Plateau but with a general surface elevation much lower at 1,300 feet though sharing some of its features. Rock outcrops are rare and generally quite low with local relief always gently and rarely exceeding 100 feet.

Three sectors can be identified:

- a) In the northern sector, east of Acasta Lake, the relief is extremely gentle, the streams are not incised and have a very irregular pattern. There are numerous eskers.

- b) A central sector, between Irritation Lake and Mesa Lake has much greater areas of rock outcrops and a more definite drainage pattern with the upper reaches of the Emile River crossing this sector from east to west. This sector has a few drumlins but no eskers.
- c) The southern sector, south of Mesa Lake, is probably much lower than the others. It is an area with a major river well incised and a great number of lakes. There are no drumlins and few eskers but some extensive sandy areas can be seen. (ADH)

The Roulante Hills: They cover some 500 square miles of granitic rock knob terrain with very little drift. The rock knob form is singularly well developed north of Snare Lake. There are numerous unconnected lakes. The total relief does not exceed 300 feet with rounded rock slopes predominating. (RH)

The McVicar Hills: Consisting of Ordovician and Silurian sedimentary rocks, the McVicar Hills present a radical change in scene from the Shield granites to the east. Elevations rise to over 1,500 feet and the terrain is characterized by long and gently drift-covered slopes except where there are some scarped hills with exposed bedrock. The scarps occur at various sites throughout the region and may be considered a regional characteristic. They are encountered most frequently at the eastern boundary, where the limestones overlook the granite terrain. Most scarps face southeast, but some hills, west of Hottah Lake and west of Hardisty Lake, have scarped outcrops in all directions.

The drift cover is generally thick enough to obscure structural details and consists mostly of glacial till but there are considerable areas as well covered by shattered rock in situ. There is a noticeable scarcity of eskers in the northern part of the region. There are very few lakes which are not fringed by marshes, and many former lakes have already been covered completely by marsh. (MH)

The Grandin Marshes: A fairly large area north of Grandin Lake is characterized by a continuous drift cover with very slight relief. This includes a large sandplain in the northeast with over 100 square miles of sandy drift and a marked concentration of eskers. Another distinctive feature of this area is the extensive marshland in the lowlying portions where vegetation is encroaching upon all still open lake waters, with large areas adjacent to the interconnecting streams being exceedingly swampy. (GM)

The Havant Hills: This area is characterized by old sedimentary rocks with moderate relief, rarely exceeding 200. Locally, however, it is often quite rugged, making overland travel difficult. The topographical features accounting for that are scarps, ridges, mesas and incised valleys, none of which follow any clear overall pattern. Even valley floors are not continuous despite the

occasionally considerable quantities of drift in some locations. A small drift-covered area near the northern end is covered by a good stand of relatively high trees, quite unlike typical conditions characteristic of tree-line regions. The only continuous waterway is the Calder River. Float or ski-equipped planes can, however, utilize a large number of disconnected lakes.

The Jolly Hills: This region at the eastern margin of the survey area, is distinguished from the surrounding Contwoyto Till Plateau by the large areas of barren granitic bedrock exposed on its upper parts. There are only small amounts of drift in some of the valleys. Surface elevations rise to 1,500 feet with local relief of between 200 and 300 feet, which is largely due to river incision. The whole area is extremely unsuitable for overland travel but many lakes are available for aircraft landing. (JH)

The Point Lake Uplands: The region as formed by incision into a granitic upland. The drift characterizing the surrounding Contwoyto Till Plateau has been stripped away in most places. Relief is generally about 300 feet, Point Lake, at 1,200 feet being well below the upland surface. Eskers are numerous, they are small and discontinuous in the east and large and continuous in the west and between Ichen Lake and Point Lake. The region lies practically on the tree line. Overland travel is difficult, small boat travel is possible through the lake system oriented towards the Coppermine River and there are many lakes suitable for aircraft landing. (PLU)

The Tree River Upland: This is a granitic Plateau extending south for about 150 miles from the Coronation Gulf Coast and from the Tree River into the Thelon area. Maximum height in the South where it borders the survey area is about 1,500 feet. In that part there is little incision and the surface is a uniform rolling barren rock terrain with fields of boulders and areas of shattered rock. (TRU)

The Turmoil Hills: With a general surface elevation of about 1,400 feet and bottom elevations in the Wopmay River Valley at 800 feet, combined with irregular orientation of sedimentary rocks causing ridges to run in any direction, the area presents serious obstacles to overland traffic. The Wopmay River, however, presents a good north-south canoe route. There is little drift cover except for some eskers and some clays and silts in old lake floors west of Rebesca Lake. The forest cover is thin but could provide some moderately good timber. (TH)

The Outside Hills: Completely surrounded by sedimentary Takiyuak Hills. Outlier of granitic rock knob terrain of the larger granitic masses to the south. Though the local relief is similar to that of the surrounding area, the rocky knobs contrast clearly with the ridges characteristic of the sedimentary base of the surrounding countryside. The granite provides much less drift material than the

sediments, but there are a number of eskers. Many lakes are suitable for aircraft landing.

The Harrison Ridges: This area is beyond the northern boundary of the survey region proper. It is characterized by high ridges developed from thick, steeply tilted sediment beds and its summit regions constitute a major water divide between Great Bear Lake and the Coppermine River. (HR)

The Dease Hills: Outside the survey region proper, they have a gently rolling surface, mainly of clayey glacial till on a base of largely horizontal Precambrian sediments. The area is mainly barren though there is thin forest cover on the shores of Great Bear Lake. (DH)

The Takiyuak Hills: This large area of rugged, sedimentary-based, ridge country completely surrounds the granitic massif of the Outside Hills and thrusts a deep tongue southward into the shield granites. The local relief is steep and rounded and averages 150 feet, which is considerably exceeded near lakes and rivers. There are many smooth rock outcrops and many sand and gravel deposits. With some care this area can be crossed by overland vehicles and there is a vast number of lakes suitable for aircraft landing. (TH)

The Atanik Rock Plain: This plains area beyond the northern edge of the survey proper rises very evenly from 340 feet to 1,500 feet with minimal local relief. The main relief features are low but sharp north-south ridges though there are some drumlins almost as high - about 150 feet. Overland movement is relatively easy due to the small scale of the relief, however, many of the numerous lakes or widenings in rivers and streams are extremely shallow, even drying up in some years, and attempting to land on them with pontoon equipped aircraft can be dangerous. (ARP)

The Inulik Drift Hills: In this small area to the north of the survey region, thin drift covers the contact between granites in the east and sedimentary rocks in the west, though both rock types outcrop in places. There is little local relief in this area which, at about 1,200 feet elevation, lies near the centre of a watershed dome. (IDH)

The Hepburn Hills: This area lies at the northwestern fringe of the survey region and consists of rolling terrain of 200 feet local relief at elevations from 900 to 1,200 feet. The surface is composed of glacial drift - often containing large quantities of clay and silt - and some rock outcrops with occasional eskers and sandy flats. Possibilities for mechanized overland travel are relatively good.

The area is basically beyond the tree line though considerable numbers of stunted trees may be found in sheltered areas. (HH)

The Hornby Bay Hills: This relatively small area north of Port Radium and just outside the survey region is of rugged relief of up to 600 feet with steep valleys and rock bluffs but with wide gently sloping valleys - often with thick drift terraces running north-eastwards from Great Bear Lake which provide access to the interior from the coast which is open to boat traffic. Access by air is limited to few large lakes. (HBH)

The MacDonnel Hills: The area, forming part of the northern coastline of Great Bear Lake, has a gently rolling drift-covered surface with relief less than 100 feet. The occasionally pockmarked character may be due to the cretaceous base which made possible karst-type erosion, modified by glaciation or glacial drift. There are many large lakes and continuous, usually thin, forest-cover facilitating overland movement. There are many sandy areas in the south and gravel deposits from raised beaches. (MH)

The Great Bear Lake Karst Plateau: This area - though quite outside the region of this survey, is still to some extent familiar to some of the Dogribs having connections to Fort Franklin, is characterized by rounded surface features on a cretaceous base which, as in the MacDonnel Hills, leads to instances of more or less well developed karst topography. Limestone drift is often clayey in character. Overland movement is generally fairly easy. (GBLKP)

The Karst Plateau Slopes: They form the northwestern fringe of the survey area and though they are part of the Karst Plateau structure they can be considered different topographic entities. They rise steeply from Great Bear Lake to the Plateau region and have a fairly continuous thin drift cover, moderately to heavily wooded. Streams flow usually in steep-sided narrow gorges and there are numerous dry gorges as well. There are some eskers. Overland vehicular travel would be quite difficult and aircraft can land only at the region's edges on Great Bear Lake. (KPS)

The Cartridge Mountains: The Cartridge Mountains rise to an average elevation of 1,200 to 1,500 feet with a core area in their north-eastern portion averaging over 2,000 feet above their surroundings, which in the east, i. e. in the survey area proper, are largely marshy and which average in the north towards Lac Grandin 1,100 feet and to the south, towards Lac La Martre, 900 feet. Their peak elevation is 2,550 feet in the north-eastern part with two minor peaks of 1,650 feet and 1,550 feet respectively in their lower, southwestern part. There is usually good drift cover, probably similar in character to that of the McVicar Hills and they are moderately to densely wooded. There are some well developed

scarps, particularly in the northern portion facing east and southeast. There are a fair number of lakes, except in the highest, north-eastern portion where float equipped aircraft can land. Local relief is, except for the scarps, generally moderate and with careful route selection overland traffic within the area should not be too difficult though access by mechanized vehicles, particularly from the survey area, is probably difficult due to the extensive marshes. (CM)

The Horne Mountains: The Horne Mountains, on the southwestern fringe of the survey area constitute a deep tongue of upland country thrusting into the surrounding Slave Marshes. The marshes average 600 feet elevation in the south and southwest to 800 feet elevation in the north and the Horne Mountains rise from them to a median plateau elevation of over 2,000 feet - quite steeply in parts in the south and southwest and more gently in the north. Peaks rise to 2,450 to 2,750, most of them in the southern part of the plateau. Within the plateau area there are two large lakes - Willow Lake at elevation 2,155 and Hornell Lake. Though local relief is in parts considerable it is generally rounded in character. Most parts with the exception of peaks and ridges have fair to good drift and wood cover, most of the drift cover from rock shattered in situ. There is a fair number of lakes for aircraft landing. Mechanized overland traffic would likely be at best moderately difficult within the area and access by mechanized means in most parts fairly difficult as it would have to pass in most places through extensive swamps before reaching the slopes of the mountains which in parts alternate with scarps. There do not appear to be any eskers. (HM)

The Slave Marshes: This large area constitutes most of the southwestern and southern part of the survey region and extends in parts considerably beyond it. It rises from Great Slave Lake and from Lac La Martre towards the Cartridge and Horne Mountains but gives a generally very flat appearance though its mean elevation rises to over 1,000 feet east of Raccoon Lake. The surface is almost everywhere covered with thick swamp vegetation which is frequently underlain by beds of peat moss. There are only few eskers. The area is covered by a very large number of usually quite shallow lakes and ponds interconnected by meandering streams and creeks which form a very irregular and often indefinite drainage pattern. The larger lakes are suitable for aircraft landing though most shorelines are obstructed by trunks and stumps of drowned trees. Overland traffic during the summer would be difficult. The Dogrib Indians developed several canoe routes to gain access to trapping grounds in the Horne and Cartridge mountains, and formerly frequently to visit Fort Simpson. (SM)

C. LOCAL TOPONYMY

As they provide some sidelights on the history of the region's exploration and development as well as the views of the Indians about their country, some notes on the toponymy of the region follow:

Fort Rae: Named after the Chief Factor of the Hudson's Bay Company, who became famous through his voyages in search of Franklin. (FR)

Rae Lake: The Indian name of this lake means Hare Snare Lake. It was referred to by Petitot in 1864 as Lac de l'Anus-de-l'Onde, des Eaux-vives or Lac des Lacets-a-Lievres. (RL)

Faber Lake: The Indian name means Bear Snare Lake and used to be referred to as Lac des Filets-a-Inconnus or Lac des Lacets-a-Ours. The present name was given in 1964 by Petitot after an English orator. (FL)

Lac la Martre: The Indian name of this lake (Tsonti) meaning Excrement Lake - probably on account of the slight sulfuric taste of the water - was literally translated into French by the first Voyageurs reaching it. Englishment apparently misunderstood it as Martre, though the homophony is not that obvious. It is therefore a mistake to associate Lac la Martre with "marten" and further to call the Indians living there the "Marten Lake Indians" as some writers have done, the connotation being due to nothing but a series of misunderstandings and wrong translations. (LLM)

Mazenod Lake: The Indian name means Lake of the White Caribou. Named by Petitot 1864. (ML)

Hardisty Lake: Named by Petitot 1864. (HL)

Tozelli Lake: This lake, named by Petitot in 1864 is actually the southern part of Hardisty Lake. Petitot showed these two lakes as separated by a ridge, used by the caribou on their annual migration to the Barrens and Franklin provides a similar description. However, this ridge, shown on Petitot's map published in 1891 is difficult to identify today, though there are a number of eskers in the approximate position. The ridge was supposed to be the demarcation line between the territories of the Yellowknives and the Dogribs, with the latter living north of the "Dogrib Mountains". By 1865 Dogribs apparently asserted that they no longer hunted in these areas, they, as well as the Yellowknives, having moved southwards. Franklin wrote that some of his Yellowknife guides had been killed by Dogribs in the area and later guides refused to hunt for him in this territory. (TL)

Marian Lake: The Indian name means Jackfish Lake. Petitot considered it as part of the North Arm of Great Slave Lake (Baie du Nord). (ML)

James Lake: The Indian name means Big Belly Lake. (JL)

Lac Seguin: Named by Petitot 1864. Petitot shows on his map of 1891, which accompanies his "Autour du Grand Lac des Eclaves" Lake Seguin as what is today Tuche Lake, the Indian meaning, "a small lake with an island in the middle", referring to Lac Seguin as Ice Water Lake, which was a translation of its Indian name. However, on his 'Carte du Bassin du Mackenzie' accompanying his 'Les Grands Esquimaux' which had been published before (1875), this mistake had not occurred.

What is now Lac Ste. -Croix he named Lac de la Croix because he had erected a cross there. The original Indian name of that lake had been Pyrite Lake. Concerning Margaret Lake, the text is not clear, amazingly there is no direct allusion to it.

It is interesting that Petitot considers the divide between the Great Bear and the Great Slave basins to be between Lac St. -Croix and Tuche Lake. (Tuche Lake is situated on the ridge line of this divide which crosses sub-latitudinally the whole Dogrib territory - Petitot in fact calls it the 'Dogrib Mountains'. He says that the Dogrib themselves refer to them as 'Barrage Mountains' as they used to form the demarcation line between the hunting grounds of the Yellowknives to the South and the Dogribs to the North. He adds: "... Today (1864) the Yellowknives do not hunt around here anymore; they as well as the Dogribs have moved southwards." This ridge line, to which Petitot gave so great an importance, is a hardly noticeable rise and seems to have been considerably exaggerated in his writings.

Petitot had noted an Indian Trail going from Taka Lake (?) to McVicar Arm on Great Bear Lake. It seems quite possible that such a trail existed though there is none there now. As can be seen on the 1 : 1,000,000 chart of the area, a small river, an esker, Rome Lake, part of Riviere Grandin, Etna Lake and then another small river would form a good passage to Great Bear Lake.

Petitot mentions another, much longer Indian Trail leading to the Coppermine River. He calls it 'the Dogrib summer portage' and describes it as the trail taken by the Indians when they "go hunting caribou on the barren plateaus of the East and the North". This trail started at Hardisty Lake. Petitot reports that Franklin placed the trail taken by the great herds of caribou heading for the Barren Grounds also near Hardisty Lake but he states himself that the 'Caribou Pass' is on the 'ligne de faite' between Hardisty and Ste. Croix Lakes.

According to Petitot the Dogrib name for Great Bear Lake translated into La Grande Eau, the Great Water, as they viewed it as being as big as the sea. He translated the name of Great Slave Lake from Dogrib into Grand Lac des Mamelles, but left the reference obscure.

D. HYDROLOGY, WATER RESOURCES AND HYDROPOTENTIAL ¹

As the survey area lies on the whole south of the southern limit of continuous permafrost, of greatest importance within it as regards its hydrological features is the fact that it straddles the dividing line between the Precambrian shield landscape in the east and the interior plains in the west in which Precambrian rocks are overlain by a succession of generally flat-lying sediments ranging from Ordovician to Cretaceous and, in many of the lower lying parts, Cenozoic. The section of the Precambrian part lying east of the Emile River, belongs to the Great Slave drainage basin, while the section west of it drains into Great Bear Lake. A section of the interior plains part drains into Lac La Martre, thus

belonging to the Great Slave Drainage Basin, the rest belongs to the Mackenzie drainage basin, via Great Bear Lake.

Recharge throughout the survey area averages between 6" and 12" per year in the form of rain and snow. On the Precambrian runoff is usually rapid and storage on the whole, confined to lakes, there is no appreciable storage as groundwater and only very little in soil, the latter restricted to relatively few and small depressions filled by swamps or muskeg. In the interior plains areas there is, in parts, considerable groundwater flow, particularly through solution channels in gypsum, dolomite or limestone beds usually of Middle Devonian or Ordovician origin. This seems to occur in the Lac La Martre area. In the Horn Plateau there may be some groundwater flow along bedding planes and joints as well as some permeable flow through less consolidated sandstones of cretaceous origin. There is also storage and permeable flow in the recent and Pleistocene sediments of the area. Large parts of the interior plains section of the area are covered with soil, primarily grey wooded soils with peat, which are usually well wooded, which represent substantial soil storage capacity. Though for most practical purposes only the discharge by stream flow is of interest, it should be kept in mind that the potential discharge through evaporation during the period from May to October is approximately 16 inches. This would indicate the great importance for the area of rapid runoff, particularly of melt-waters, into lake storage.

Though no flow measurements were available for the Riviere la Martre, which as a potential source of hydro power is of greatest interest in the survey area, extrapolation from data on other rivers in the area would indicate a minimum yearly flow of 1,400 c. f. s. Considering the difference in elevation between Lac la Martre and Great Slave Lake, which is in excess of 300 feet, the potential of Riviere la Martre would appear to be at least as big as that developed on the Snare River.

The supply of drinking water has always been a problem at the settlement of Rae. The parts of Marian Lake surrounding it are extremely shallow. In many places even several hundred feet offshore depths average only between 4 and 6 feet. Though the settlement itself is located on granite outcrops, the lake bottom is formed of clay. The water is thus always discoloured - throughout the lake - by much suspended and some colloidal matter. Though the water of the lake is potable, two attempts were made to obtain clear water, both were unsuccessful. Near the mission hospital a diamond drill hole was put down to 700 feet in granite but did not cut any waterbearing bedding planes or fissures and the granite itself is too massive to allow movement of groundwater. Approximately 100 feet offshore a brass well-point was put down through the bottom clay. It gave some water from the sands between the clay and the granite but became clogged up as the screen was too coarse.

The waters of Lac La Martre are clear but have a slight sulphuric taste. When the wind blows for a while towards the sandy beach on the north side of the spit, a thin line of sulphur bloom precipitated out of the lake water appears along the waters' edge. Drinking water is usually obtained from the lake. It is estimated, however, that the sand overlying the Ordovician dolomite on which the settlement is located and which averages more than 20 feet in thickness would yield between 20 and 40 gpm. from a well equipped with a suitable screen.

The other settlements in the area all obtain their small water requirements from the lakes on which they are situated.

1 GSC Paper 64-39, L. V. Brandon 'Groundwater hydrology, and water supply in the district of Mackenzie, Yukon Territory and adjoining parts of British Columbia.



Boundaries of Drainage Basins.

Approximate Limit of Continuous Permafrost.

450
2690

Yearly Flow (c.f.s.) / Catchment Area (sq.m.)

MAP 3 :

After : L.V. Brandon.

HYDROLOGICAL FEATURES.

E. THE CLIMATE

The survey region lies within what in Canada is referred to as the northern climatic region, that is, south of the July 50° isotherm which, generally following the tree line, constitutes the border of the arctic climatic region. The northern - or sub-arctic - climatic region constitutes a broad band running from the Northwest Territories, where it includes all of the Mackenzie District south of the tree-line, to Labrador, covering the boreal portions of Alberta and Saskatchewan and all of central and northern Manitoba, northern Ontario and virtually all of Quebec north of the St. Lawrence. Within the survey area, forest-cover is generally lighter than in the more southerly portions of this belt. The range from summer to winter temperatures is extremely wide; from a mean daily of -20° in January, the coldest month, to about 60° in July, the warmest. Mean monthlies are below freezing for 7 months of the year. The frost-free period varies from 50 to 100 days and snow is liable to fall in any month except July and August. Precipitation is light, with a clear summer maximum. The area may, in fact be called sub-humid, in spite of the large number of bodies of water and of swamp, which owe their existence to the low degree of evaporation and the lack of drainage. Annual precipitation totals range from 9 to 15 inches, with a mean annual snowfall of about 50 inches.

As weather reporting within the survey area is rather incomplete, tables for long-term averages and extremes of Climate for Fort Simpson and for Yellowknife are reproduced. The long-term averages and extremes for the survey area should fall between those for these two stations. (Tables 1 and 2)

The area lies in a broad transition zone between the Mackenzie lowlands and the barren lands beyond the tree-line. The main physiographic control of the local climate is the interference of the Western Cordillera with the prevailing westerlies.

In January the mean sea-level pressure is high over the Mackenzie Valley and low over South Greenland, and pressure gradients over the survey region are generally very gentle, with consequent low mean wind speeds at low levels. At 16,000 to 18,000 feet however, there is moderately strong northwesterly circulation as the area lies just east of a prominent ridge in the 500 mb contour pattern. Generally there is an increase in the strength of northwesterly and westerly flow as height increases. The January pattern with its high surface pressures persists until March. As in March and April the Greenland low diminishes and pressures over the Mackenzie and the Keewatin become uniformly high, large, slow-moving anticyclones begin to dominate. This is in late spring accompanied by a general slackening of the higher level westerly circulation. During the summer the situation is less clear cut. At the lower level a ridge of fairly high pressure lies over the lower Mackenzie valley with lower pressure over Southampton Island, resulting in a mean flow from west or northwest, with winds light due to the gentle pressure gradient. At 500 mb circulation, though generally similar to January's, is much weaker. The ridge to the west is still prominent and the area lies under cool northwesterlies from the surface into the

Table 1

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations-

FORT SIMPSON, N.W.T.—61°52'N, 121°21'W.

ALTITUDE ABOVE M.S.L. 422 FEET

	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400	1000	1600	2200
		Maximum	Minimum	Maximum	Minimum	Highest Re-corded	Lowest Re-corded		P.S.T.	P.S.T.	P.S.T.	P.S.T.
		°F.	°F.	°F.	°F.	°F.	°F.		p.c.	p.c.	p.c.	p.c.
Jan.....	-15.1	-6.8	-23.4	23	-48	53	-66	2,480				
Feb.....	-9.4	0	-18.9	28	-46	60	-69	2,100				
Mar.....	4.3	15.9	-7.3	39	-34	55	-52	1,880				
Apr.....	25.4	37.0	13.9	60	-12	71	-39	1,199				
May.....	44.6	55.4	33.8	77	22	95	-9	630	81	62	56	72
June....	57.4	69.0	45.9	83	33	95	25	240	80	64	53	72
July....	62.4	74.6	50.2	88	38	97	29	110	80	63	54	74
Aug.....	57.7	69.4	46.0	84	31	94	21	240	82	68	57	79
Sept....	46.6	56.2	37.0	75	22	86	7	550	82	69	61	78
Oct.....	30.8	37.9	23.8	62	3	89	-18	1,060				
Nov.....	6.0	12.6	-0.7	27	-25	56	-43	1,770				
Dec.....	-11.0	-3.4	-18.7	19	-42	52	-64	2,360				
Year....	25.0	31.8	15.1	89	-53	97	-69	11,610	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0	0	7.6	8	0.76	0.63	NW	41	6.6		0	31
Feb.....	0	0	6.2	7	0.62	0.30	NW	51	7.8		0	28
Mar.....	T ²	4.4	7	0.44	0.53	NW	41	7.9			0	31
Apr.....	0.13	1	3.7	5	0.50	0.89	NW	30	8.1		0	28
May.....	0.90	7	1.6	1	1.06	0.68	NW	26	8.0		2	10
June....	1.39	9	0	0	1.39	2.42	NW	26	7.5		2	1
July....	1.94	10	0	0	1.94	1.45	NW	29	7.1		3	0
Aug.....	1.63	9	T ²	2	1.63	1.69	SE	29	6.8		1	2
Sept....	1.29	7	0.4	1	1.33	1.32	SE	33	8.1		2	9
Oct.....	0.32	3	4.5	5	0.77	0.70	SE	34	7.2		0	25
Nov.....	T ²	9.1	10	0.91	0.75	NW	38	7.8			0	30
Dec.....	0.01	2	7.7	9	0.78	0.62	NW	47	6.6		0	31
Year....	7.61	46	45.2	53	12.13	2.42	NW	34	7.5		6	226

¹ Average date of last Spring frost June 4; of first Fall frost Aug. 28.

² Average less than 0.5 days.

* "The Climate of Canada" by Meteorological Branch, Air Services, D.O.T., Toronto.

** Average less than 0.5 days.

Table 2**Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations**YELLOWKNIFE, N.W.T.¹—62°28'N, 114°27'W.

ALTITUDE ABOVE M.S.L. 682 FEET

	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme			Degree- Days Below 65°F.	0500 M.S.T.	1100 M.S.T.	1700 M.S.T.	2300 M.S.T.
		Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Highest Re- corded	Lowest Re- corded						
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	-14.7	-6.5	-22.9	17	-48	37	-60	2,570					
Feb.....	-14.2	-5.3	-23.1	15	-48	43	-60	2,270					
Mar.....	1.4	11.4	-8.6	33	-38	42	-47	2,020					
Apr....	17.3	28.1	6.5	52	-20	60	-38	1,410					
May....	38.9	47.8	30.0	66	17	79	-4	790	86	72	65	80	
June....	53.3	62.1	44.5	77	34	85	28	370	80	61	57	72	
July....	60.9	69.5	52.3	81	42	86	33	160	82	61	56	73	
Aug....	56.7	64.5	48.9	79	38	86	34	250	88	70	64	80	
Sept....	44.9	51.1	38.7	67	24	79	18	580	88	77	71	84	
Oct.....	31.0	36.1	25.9	54	7	65	-9	1,060					
Nov....	7.2	13.8	0.6	34	-27	46	-43	1,740					
Dec....	-12.9	-5.2	-20.6	17	-42	37	-55	2,420					
Year...	22.5	30.6	14.1	83	-51	86	-60	15,610	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN- SHINE	THUN- DER	FREEZING TEMPER- ATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)				
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maxi- mum Fall in 24 Hours	Direc- tion	Per- cent- age					
													in.
Jan.....	0	0	5.4	8	0.54	0.49	N	33	8.0		0	31	
Feb.....	0	0	4.6	8	0.46	0.31	E	29	9.2		0	28	
Mar.....	T	³	3.9	7	0.39	0.43	E	27	10.7		0	31	
Apr.....	0.10	1	2.6	4	0.36	0.30	N	25	11.6		0	29	
May.....	0.52	5	0.7	³	0.59	1.34	E	23	10.5		0	20	
June....	0.73	6	T	³	0.73	0.79	NE	21	10.4		1	1	
July....	1.15	9	T	³	1.15	1.11	N	20	10.5		2	0	
Aug....	1.02	9	0	0	1.02	1.24	SE	20	10.2		1	0	
Sept....	0.90	8	0.2	³	0.92	0.95	N	22	10.4		³	5	
Oct.....	0.58	5	4.1	5	0.99	0.61	E	25	11.7		0	23	
Nov....	T	³	6.9	10	0.69	0.48	E	29	9.3		0	30	
Dec....	T	³	6.1	11	0.61	0.33	E	30	8.6		0	31	
Year...	5.00	43	31.5	53	8.45	1.31	E	21	10.1		4	229	

¹ Airport data, less than 0.5 days.² Average date of last Spring frost May 31; of first Fall frost Sept. 21.³ Average

* "The Climate of Canada" by Meteorological Branch, Air Services, D.O.T., Toronto.

** Average less than 0.5 days.

stratosphere. The circulation is variable during September and October but the winter pattern has usually reasserted itself by the end of November.

The area lies on the principal path by which arctic anticyclones enter North America, and anticyclones, or high pressure systems thus dominate the circulation for most of the year. As the air blowing outward from the center near the ground is replaced from aloft, which is being warmed and rendered relatively drier in its descent, clear sky is prevalent when anticyclones dominate the weather picture, i. e. during the cooler months. Only during the three summer months are traveling cyclones frequent. Midwinter anticyclones are mostly formed over the mountains of the Yukon or western Alaska where cold arctic air is further cooled, leading to frequent and extended periods of below -40° weather when the system moves into the Mackenzie. The lowest temperatures, however, are due to even colder air blowing across from Siberia at higher elevations. Rarer warm-cored anticyclones, which are very slow moving, lead to occasional temperature anomalies which can be significant in the spring, leading to earlier than usual break-ups. Traveling cyclones bring to the area what precipitation there is as well as nearly all the bad flying weather. During the winter a few major Pacific cyclones cross the cordillera, bringing maritime arctic air and higher temperatures into the Mackenzie Lowland. They bring medium to high cloudiness and some light snow. Occasionally, 'cold lows', developed within continental arctic air over the Eastern Arctic, approach the region close enough to bring strong winds and blowing snow to the edge of the barrens. As summer conditions begin to develop in May, characterized by the maritime arctic front lying across the area, cyclonic disturbances begin to move across the area from the west with some frequency. These disturbances bring clouds and widespread rain and, at the beginning of the winter, most of the snow, often associated with strong winds.

F. THE ECONOMICALLY RELEVANT GEOLOGY

General

The dominating geological feature of the survey area is, as should be obvious from the discussion of the physiography above, the dividing line between the Precambrian and the Paleozoic sediments running from the northern end of Marian Lake via the Rae Lakes, Hislop Lake and Hottah Lake towards McTavish Bay of Great Bear Lake. Most detailed geological work in the area has been done and most staking activity took place to date to the east of this dividing line in the exposed shield areas; hardly any drilling has taken place to the west of it and in consequence little is known of the underlying structures there while the, primarily Ordovician, dolomites, sandstones, conglomerates, arkoses or the Alluvial deposits forming the surface have so far been of little interest from the standpoint of Economic Geology.

The first comprehensive geological map covering the area is the Canada, Department of Mines, Geological Survey Publication No. 1585 issued in 1921, which

covers the whole Mackenzie River Basin. Entries were confined to the coasts of lakes and the banks of the major rivers with hardly any detailed geology reported in between. However, the Plains/Shield divide running through the survey area is already well marked. Subdivisions recognized were those between the Silurian forming the west shore of North Arm and the Middle Devonian further inland stretching towards the Horne Mountains and, within the Precambrian, between the schists, slates, limestones and quartzites around Yellowknife Bay and the granites and gneisses dominating the rest of the shield area.

Today, a number of detailed geological maps covering the most promising areas within the shield, are available from the Geological Survey and enumerated in the Bibliography. From them, as well as from local staking maps, the following attempt at a summary of the more important economically relevant geological information has been derived. It is stressed that this is only intended to give a broad general picture and the reader is referred to the bibliography for details.

To the west of the limit of the shield and outside the coverage of Map 4 only two areas have so far caused some interest. One is the Sulphur Bay area (Claim sheets 85-G-5 and 85-F-8) on the south-western shore of the opening of Great Slave Lake's North Arm. Here a subsidiary of Rayrock Mines - Elgin Petroleum Corp. - has done some drilling and exploration on two groups of claims and staked another group in the outcrop area of the Presqu'ile Reef. So far considerable amounts of oil staining in Presqu'ile dolomites were encountered in drilling as well as traces of galena and sphalerite and finely disseminated marcasite in the underlying Pine Point limestone. Consolidated Mining and Smelting Co. did some staking and preliminary exploration work in the same general area, including some diamond drilling on properties adjoining those of Elgin Petroleum. At the time of the survey no detailed results were published. The other area within the Interior Plains region lies to the west of Hottah Lake (Claim sheet 86-D-15). A group of 45 claims there covers low grade copper showings in the Paleozoic.

The core of the survey area is covered by claim sheets 86-B-1 to 8, 86-C-1 to 8, 85-0-1 to 16, 85-N-1 to 16, 85-J-11 to 16 and 85-K-16 and by the GSC Maps 'Indin Lake, East Half' (49-10), 'Ingray Lake' (697-A), 'Ranji Lake' (1022-A), 'Snare River' (690-A) and 'Wecho River, East Half' (49-14). Correlations and coverage of these maps and claim sheets are shown on Map 4 of this report. In the following, the current staking and exploration activities (1965-66) will be discussed first, then claim groups staked in the past will be covered briefly and finally some geological detail considered of some general interest from an economic point and not covered in the preceding parts will be summarized. No claim is made that the treatment given here is comprehensive - such an undertaking would have exceeded the scope of this particular type of report, it is hoped, however, that the information contained will suffice to give a reasonably complete picture for the non-specialist reader. Throughout, the description will follow the sequence used in the numbering of the claim sheets.

Current Activity

(85-J-16) In this area, a group of claims (PJ) had been staked by Giant Yellowknife Mines Ltd. and geologically mapped during the preceding seasons. A schist alteration zone is the interesting feature, but samples so far had given only low gold values. Another recent group of stakings (NOSE) by the Earl Jack syndicate was also prospected in detail, some drilling and trenching was done. Various schist zones and quartz stringers were intersected, but though some gold values were encountered, results so far were disappointing. There has been a fair amount of staking in this area in the past, and though better future results are not ruled out, undue optimism in regard to this area should not be indulged in.

(85-K-16) Giant Yellowknife Mines Ltd. has three claim groups in the area covered by this sheet - MARIAN and RAE. The first two groups cover Precambrian inliers outcropping through Ordovician sediments while the last group is on massive Ordovician dolomite. Former claim groups covered a somewhat larger area and included the areas of the current claims as well as a small area on the opposite side of Marian Lake.

(85-O-1) In the south-east corner a number of claim groups (PAT, PAM, MAC, J. E. S. & AL) now controlled by Giant Yellowknife covers a number of minor faults and shear zones within the Yellowknife Group, containing quartz veins mainly within graywacke or argillite. Trenching yielded some promising Au values but the limited amount of drilling carried out so far was somewhat disappointing. Further drilling is planned. A little underground work had even been done in this area in the past by Viking Yellowknife Gold Mines Ltd.

(85-N-8) Two active claim groups (I. O. & C. J.) controlled by Anglo-United Development Co. Ltd. cover a gold showing which has been known for a considerable time. A fair amount of diamond drilling over the years has outlined some tonnage of moderate grade, which occurs mainly in highly metamorphosed graywacke and argillaceous graywacke of the Yellowknife group. Further drilling is planned. Though results here justify perhaps some hope for the future, there appears to be little chance for early development, pending increases of economic tonnage and current uncertainty of the gold market.

(86-B-5 & 86-B-6) The HID and MW groups staked at the north end of Norris Lake cover some long-known gold showings, though present interest is mainly in the lead-zinc and silver values associated with the gold-bearing veins. Drilling was done in the past on part of the property for gold values, though information on the other values stems primarily from grab samples. These claims are under option to Prosper Oils Ltd. from Mr. A. V. Giauque and some further trenching and drilling is planned. A little to the south-east, to the north of Indin Lake lies the FAG group, held by Falconbridge Nickel Mines Ltd. Part of the group is a restaking of the old Echo Indin property. They cover a belt of volcanic rocks, but though some surface samples out of the main quartz carbonate zone showed some good Au assays, subsequent drilling yielded no values of interest.

The extent of past staking activity can readily be seen from the accompanying map. The largest claim groups here were associated with the old Rayrock mine (sheet 85-N-7).

On the geological map 'Wecho River - East Half' there are of interest, apart from the two gold showings in the south-east corner, three occurrences of cordierite, a bluish, translucent mineral of the pyroxene - hornfels facies, some of which may be of gem-quality. They are about 7 miles south of the east end of Ghost Lake, 8 miles west of Wecho Lake and 2 miles north of Rowland Lake and their approximate locations, like those of the gold showings are entered on Map 4. In the Snare River map area, the most notable gold showing is the one on an island in Mosher Lake, two others are shown north of Russel and Slemon Lakes. In the Ingray Lake sheet area, gold showings from the south shore of Indin Lake, east of Arseno Lake, and Near Norris Lake. In the Indin Lake sheet area there is an occurrence of crystalline beryl between Indin Lake and Snare Lake and one of andalusite and sillimanite southeast of the east end of Truce Lake.

The Petroleum Potential

During the summer of 1966 as a result of rumors getting around about seismic work to be carried out in the area, between Lac La Martre and Great Bear Lake, there was some speculation among the people of Rae about potential oil developments in their territory. Chances for that, however, seem to be negligible. The survey area lies partly in the Precambrian, partly in the Interior Plains structural province. To dispel any unjustified hopes regarding oil potential that may have been raised in the area, the following statements applying to those parts of the two structural provinces which lie within the survey area are summarized after Douglas et. al.: *1)

"The Precambrian shield embrace(s) deformed sedimentary, volcanic, metamorphic and igneous rocks unsuitable for the retention of hydrocarbons Although Great Bear Plain is little known, available data suggest a west-dipping homocline of Ordovician and Middle Devonian carbonate, extensively exposed or overlain by a thin veneer of Cretaceous shale. The potential of this region is low as a result of the lengthy intervals of erosion represented by unconformities at the base of the Middle Devonian and Lower Cretaceous."

This seems to rule out definitely the parts of the survey area belonging to the Precambrian Shield and to the Great Bear Plain. This leaves only parts of the Great Slave Plain. Douglas et. al. state that Upper Devonian limestones, where overlain by younger strata may be considered prospective. The only area, where such conditions obtain, seems to be the Horne Mountains, which seem to be Cretaceous over Upper and Late Middle Devonian. As however, in the region, the underlying Devonian is on the whole either horizontal or very gently dipping, concrete chances seem to be very remote. For all practical purposes it appears that the possibility of Petroleum development in the survey area must be discounted.

The Uranium Potential

As Eldorado's Port Radim mine at the fringe of the survey area was Canada's first producer of radioactive material, speculation is lingering on that with increasing demands for Uranium products there might be a revival and perhaps expansion of uranium production in the general area. On general grounds (Roscoe) it seems unlikely that there is great potential. As over 90% of Canadian reserves are in quartz pebble conglomerates within a Huronian formation in the Elliot Lake area of Ontario with adequate tonnages of profitably mineable ore to meet anticipated demands through the '70's, the obvious place to look for additional deposits is of course there. Roscoe also indicates, however, that productions from other types of deposits in other areas could become important, particularly in multi-product operations. Though prospects do not seem to be too bright for any substantial new producers to develop in the area, it has lately become apparent, that the addition of a uranium product to the concentrates produced by Echo Bay Mines, may play a role in prolonging the life or extending the scope of this operation. Echo Bay adjoins the original radium-uranium-silver mine of Eldorado and purchased their original plant (140 t. p. d. mill). Control has recently been acquired by International Utilities Corp., with Cominco retaining a royalty interest of 3% net smelter returns. Lately significant uranium values have been encountered which show promise of improving at depth. The workings on which these values were found are on the third level and are approaching the Echo Bay #2 series of rocks in the original Eldorado ores which averaged up to .75% U308 were found. For further work in this area, an internal shaft of 500 feet will be sunk from the lowest (3rd) level.



CHAPTER 3

THE FLORA AND FAUNA OF THE AREA

A. AGRICULTURAL POTENTIAL AND THE ECONOMICALLY RELEVANT FLORA

There are no commercial agricultural activities being undertaken in the survey area though a fair number of vegetables and other garden produce, including potatoes could undoubtedly be grown by local inhabitants for home consumption on the basis of small scale experiments carried out off and on by local whites and by extrapolation from the data obtained by the Department of Agriculture experimental station at Fort Simpson, as well as at Yellowknife. As in the Rae - Lac La Martre area, with the exception of some esker areas near Lac La Martre, muskeg type soils predominate, it seems safe to assume that the same general conditions as those of the Yellowknife muskeg soils would be met with, that is a slight acidity, high organic and low mineral content, requiring fertilizers containing Nitrogen, Phosphorus and Potash. There seems to be little question that experiments at Rae and Lac La Martre on the part of the local population should be encouraged and supported by departmental project and co-op development officers.

Aside from potatoes, probably var. Canus should be used for a start, initial experiments should concentrate on a few staple vegetables, particularly those that could be eventually utilized in conjunction with waste from fish and with so far unutilized coarse fish, in attempts at pig-raising. The following vegetables would appear promising according to Fort Simpson and Yellowknife results: Broad beans (var. Broad Windsor); beets (var. XXX Globe and Detroit Dark Red); cabbage (var. Copenhagen Market and Penn State Ballhead); carrots (var. Amsterdam, Oxheart and Red Cored Chantenay); possibly celery; lettuce (var. Grand Rapids and Imperial 456); Swede turnips (var. Bangholm and Laurentian) as well as some varieties of radishes, spinach and parsnips. For further details the reader is referred to the 'Progress Report 1947-1953, Dominion Experimental Substation Fort Simpson' by J. A. Gilbey, of which the above is only a short summary.

There are found in the area in the wild state, a number of plants the roots, leaves or berries of which are edible. Though on occasion eaten by local Indians, none are of real economic significance or likely to be capable of commercial utilization, though in other parts of the world it is likely that some of the wild berries would be utilized to a greater degree by populations on a similar or even higher level of economic development. Among plants the roots of which are occasionally eaten the most frequent is the liquorice root (*Hedysarum boreale*), and, north of the tree line, in places within the Snare Lake settlement hunting and fishing area, *Pedicularis lanata* and *Polygonum bistorta*. On the western and northwestern fringes of the area and in the Horne Mountains occur some of

the edible leaf plants - wild rhubarb (*Polygonum alpinum*), mountain sorrel (*Oxyria digyna*) and northern fire-weed (*Epilobium latifolium*).

The variety of edible berries found within the survey area is considerable and some of those preferring acid or peaty soils occur in considerable numbers, often within fairly short distances of the settlements. Among the latter are: The mountain cranberry (*Vaccinium vitis-idaea* L.) a creeping shrub yielding red berries in August and September which are good even the following spring, particularly plentiful on acid soil in open birch and willow thickets. This berry has long been known as an excellent antiscorbutic due to its high vitamin content. The bilberry (*Vaccinium uliginosum* and *V. caespitosum*), a low shrub with blue-black berries with a bloom which ripen in August prefers acid soil and open places. The bake-apple (*Rubus chamaemorus*) is a low perennial which grows from a creeping rootstock with juicy yellow berries similar to a large raspberry ripening in early August grows on peaty soil. This plant was reported and noted to be quite plentiful around the northern end of Lac La Martre. The black crowberry (*Empetrum nigrum*) is an evergreen, low shrub producing plentiful shiny black, sweet juicy berries. It prefers sandy and rocky soils coupled with a moist climate and is in the area most plentiful along the Great Bear Lake shores. The alpine bearberry (*Arctostaphylos alpina*) is a trailing shrub with shreddy bark with red or black berries. Occurrences of these berries can easily be identified from a distance when after the first frosts the leaves turn bright red. Plentiful in the area from Snare Lake to the shores of Great Bear Lake and in the Horne Mountains, Northern gooseberry (*Ribes oxycanthoides*) is very common preferring gravelly stream banks and clearings, such as are found for instance in the neighbourhood of old Fort Rae, where it occurs together with the wild raspberry (*Rubus idaeus*) which often shares its habitat. The berries are smaller but otherwise similar to those of the cultivated varieties. The red currant (*Ribes triste*) is found throughout the wooded parts of the area though rarely in extensive stands. Very plentiful throughout, particularly along the banks of streams and lakes and on not too exposed slopes, is the wild strawberry (*Fragaria glauca*).

Throughout, a variety of mosses and lichens occur, which serve as forage for caribou and other wildlife, but which are not utilized by humans though the early voyageurs are reported to have used some varieties for subsistence which they referred to as rock tripe.

Noteworthy around the northwestern shore of Lac La Martre are the extensive peat deposits, which occasionally form the shoreline rising vertically eight feet to fifteen feet out of the water. These deposits might well be kept in mind for any gardening or other agricultural experiments in the area.

B. THE TIMBER RESOURCES

Only nine species of trees occur in the survey area. The four coniferous ones are the jackpine (*Pinus banksiana* Lamb.), the tamarack (*Larix laricina* K.),

the white spruce (*Picea glauca* V.) and the black spruce (*Picea mariana* BSP.). The five broadleaved species are the poplar (*Populus tremuloides* M.), the balsam poplar (*Populus balsamifera* L.), the white birch (*Betula papyrifera* M.), the water birch (*Betula occidentalis* H.) and the mountain alder (*Alnus tenuifolia* N.).

Though forest cover over most of the region, with the exception of some mountainous areas and the northeastern border zone near the tree line, is fairly dense only very few individual specimens attain a growth even close to the maximum of their species, consequently much of the forest is quite shrublike in character. There are a few stands of potentially merchantable conifers, none of them however approaching in extent or accessibility those which serve as bases of milling operations in the Mackenzie basin. They are on the other hand sufficient for some local uses, particularly those on the eskers extending into the southeastern part of Lac La Martre should be adequate for any housing construction in that settlement. A limited amount of commercial utilization of local conifers may of course be developed: jackpine because it takes creosote well for hydro - and telephone poles and for cribs for them; tamarack because of its resistance to decay and strength for the same purposes and the spruces for mine timbers. Any of these species, if large enough, can of course be sawn for a variety of local uses - fences, boardwalks, sheds etc. and for this reason purchase of some small secondhand sawmilling equipment for co-operative use at Rae and Lac La Martre seems justified.

Since birchbark has largely fallen into disuse in the domestic economy of the local population, most use of the broadleaved trees is probably made by moose for forage.

All trees are of course still used to some extent for firewood, though even that is declining with the increasing dependence upon oil-burning stoves and furnaces even among the native population in the major settlements. This trend has not progressed too far however at this time to be reversed decisively which would remove a substantial actual or potential strain upon the cash resources of local communities particularly if firewoodcutting for household use is not allowed to be turned into a regular winterworks or community development project.

Some suggestions were heard locally to develop a handicrafts industry using birchwood for household utensils, similar to the product line now distributed in other parts of Canada by 'Bariboucraft', or even for some local furniture production. This type of development experiment must most emphatically be advised against in the light of present local levels of skills, local wage structure and expectations, as well as attitudes towards wage work and the market structure for this type of product. Such a development is of course not ruled out for some future time at a more advanced level of acculturation.

C. CARIBOU AND MOOSE

To the Dogrib Indians, caribou and moose have traditionally been the major sources of meat as well as of skins. In the following, the main emphasis will be on a short summary of data relevant to the role of the caribou in the survey area, drawn largely from the definitive study of the Canadian caribou by J. P. Kelsall.

The survey area lies almost fully within the usual forested winter range of the barren ground caribou. This is part of the northwestern transition zone between the bore forest and the tundra, bordered along its northwestern edge by a belt of forest tundra, running from McTavish Arm of Great Bear Lake towards the end of Great Slave Lake's East Arm. This belt is characterized by relatively sparse coniferous wood cover broken by open tundra.

There has been considerable concern by local Indians, as of course also generally, about the alleged massive decrease in the numbers of barren ground caribou and the effect that this decrease is bound to have upon development prospects. In regard to the situation of the Dogribs, any such concern appears today to be misplaced. Though there is no doubt that a considerable decrease has taken place, it was nowhere near as disastrous as is commonly pictured. Today there seems to be little doubt that the estimate of E. T. Seton of 30 million barrenground caribou was wildly inaccurate and that the estimate by Banfield of 1 3/4 million in primitive times was much nearer the mark. Even from this figure a decline to about 200,000 in the 1950's is substantial. Considering, however, that there may be fairly long natural cycles in caribou population and that the massive overkill that no doubt was characteristic of the first half of this century and which now has on the whole come to an end due to changing patterns of population distribution and changing food habits among the native population, there appears to be no danger of further decline. The Dogribs, in any case, have for some considerable time now been dependent upon fish rather than meat as their food staple of local origin.

Live weights for adult barren ground caribou average 238 lbs. for males and 171 lbs. for females, compared with 395 lbs. and 291 lbs. respectively for woodland caribou which also occur in the area. Though the latter are shot when met with on any trips, they have never, due to their dispersion, been the subject of organized hunts. Important for the organization of barren ground caribou hunts is a consideration of the state of their fat deposits and their skins during the various seasons. Fat accumulates to some degree during the winter, if range conditions are good. This is lost before or during the spring migration. Fat again builds up to a much greater extent after the end of the mosquito and black-fly season, starting in late August. The fat then is concentrated over the rump and saddle and this layer will weigh to between 30 and 40 lbs. total fat in an adult bull amounting to 60 to 80 lbs. This fat usually disappears again completely by the end of the rut near the end of November. The fat deposits of cows and calves never become as extensive as those of the bulls, though they often are in best shape when the bulls are in the worst. As regards the fur, the animals

usually have their new coat completed shortly after midsummer. The new coat is quite dark, lightening gradually. The winter coat is up to 2 inches thick on the body. The thickness of the coat together with the buoyancy of the hair provides a measure of insulation unequalled by any other fur. However, as the coat is at its best during early spring, a time at which bleaching of the guard hairs has progressed considerably which makes them brittle, and immediately preceding moulting, caribou skins taken at this time 'shed' even worse than those taken during other seasons. Antlers, which are also shed annually, beginning in November at the end of the rut, used to be utilized for numerous utensils but today are used to only a very small extent for carvings and a few sets can occasionally be sold for small amounts to tourists.

As will be discussed further in the next chapter, changing migration patterns of the barren ground caribou appear to have exerted considerable influence upon the changes in trading post and settlement locations within and on the fringe of the survey area. Only very recently, however, has detailed information on these changes, qualitatively and quantitatively reliable, begun to be compiled. Though the changes in herd movement are unpredictable in detail, some basic regularities do exist. Between April and early June the herds move from their winter ranges which are usually in the forest but may occasionally be in the tundra to the calving grounds and summer ranges which are always far in the open tundra. During the summer they move about the tundra, fairly erratically, possibly reacting to wind conditions and degree of insect harassment. In late summer they begin to move back southwards and westwards towards the winter ranges on which during the winter they usually disperse to a greater degree than during the summer. The group that usually winters in or near the survey area usually travels for the summer into the Bathurst Inlet area following major lakes or river valleys in the forest and after reaching the tundra the major divides of the river systems flowing into the arctic ocean. Changes in numbers and patterns in the area from 1948 to 1960 were approximately as follows:

In the winter of 1948 a large herd of about 210,000 stayed in a triangular area stretching from north of Grandin Lake to the Horne Mountains to within 40 or 50 miles of the Mackenzie River at the influx of the Willowlake River. This group in the spring of '49 migrated along the Riviere La Martre and the Emile River towards Contwoyto Lake. Another smaller herd of about 5,000 that wintered along the southeastern shore of Great Bear Lake travelled in the spring into the barrens southeast of Coppermine.

During the winter of 1950 one large herd of 134,000 wintered in a broad belt on the east bank of the Mackenzie River, from Fort Norman to the mouth of the Willowlake River. The larger part of it travelled in the spring of '50 towards Contwoyto Lake, keeping well north of Lac La Martre while the smaller part of it travelled along the southeastern and eastern shores of Great Bear Lake into an area south of Coppermine. During the same period a small group of 10,000 that had wintered on the northeastern side of Great Bear Lake travelled to the barrens west of Coppermine, while two small herds of 3,000 and 2,500 which had wintered near McTavish Arm and west of Grandin Lake respectively joined the major groups travelling through

their territory. Another small group of 2,500 which had wintered just north of the Horne Mountains went east just to the north of Marian Lake and dispersed north of Yellowknife.

In the winter of 1951 the main herd - numbers were not estimated closely due to wide dispersion - wintered throughout a wide area encompassing the whole western part of the survey area, dividing into two migrations similar to those of the previous year, though the southern group followed a route a little southwards of the one used the previous year. Again, another herd of 11,000 wintered north of Great Bear Lake and moved in spring to an area southwest of Coppermine.

In the winter of 1952, a herd of about 36,000 wintered dispersed over the whole west-central part of the survey area, from just north of Marian Lake to the southern end of Hottah Lake and from this line west to close to the Mackenzie River, moving in the spring of '53 in a broad stream to the area between Contwoyto Lake and Bathurst Inlet. A small herd of 3,000 wintering just south of McVicar Arm joined another of 10,000 wintering along the eastern shore of Great Bear Lake to move across the Coppermine River during the spring, while the herd wintering between Dease Arm and Hornby Bay, numbering only 2,000, again went to the Barrens west of Coppermine. A small part of the herd wintering east and southeast of Yellowknife had crossed North Arm to winter to the south of Old Fort Island and re-crossed in the spring in the vicinity of Old Fort Rae to move towards the south end of Contwoyto Lake.

During the winter of 1953 about 20,000 caribou stayed in a number of smaller groups in the forest tundra belt on the northeastern fringe of the survey area and in the spring of '54 moved on a fairly broad front only a relatively short distance northeastwards into the open tundra. Only one small group of about 500 wintered within the survey area a little to the north of Lac Grandin. A group of 6,500 which had wintered on the southwestern shores of Great Bear Lake moved along the southern and eastern shore in the spring while another group possibly corresponding the one usually wintering along the north shore apparently stayed in the open tundra just west of Coppermine.

In the winter of 1954 the usual pattern began to re-establish itself. A group of 7,000, though still on the fringe of the area, wintered within the transition zone proper, moving in the spring of '55 to just west of Bathurst, and joined for the migration by a smaller group of 3,000 that had wintered north of Lac Grandin. The north shore herd only numbered about 500 but wintered in its usual area and moved to its usual summer range southwest of Coppermine. A big herd of 26,000 however wintered in an area off the southwestern end of Keith Arm moving in the spring along the lakeshore towards Port Radium and into the tundra beyond.

The winter of 1955 was somewhat unusual again. Only one herd of about 9,000 wintered in the northwestern part of the survey area moving in two streams

northeastwards in the spring. Dispersed groups totalling 10,500 wintered around the northeastern part of Great Bear Lake, moving only a little distance to the northeast hardly out of the forest tundra zone, while a fair number of animals stayed out in the open tundra all winter in a broad area along the coast from the Coppermine River to Queen Maud Gulf.

During the winter of 1956 the pattern was completely broken. A major herd appears to have wintered in an area within the forest tundra zone to the east of McTavish Arm and a smaller one west of the southern end of Hottah Lake. The major group seems to have come during '56 from an area south of Dubawnt Lake and in '57 to have split up, with a smaller group moving towards the coast of Dolphin and Union Strait and a larger one to north of Great Slave Lake's East Arm. During the winter of 1957 there was consequently no major group wintering anywhere near the survey area.

During the winter of 1958 a herd of 30,000 again wintered in the forested part of the northeastern border zone of the survey area, moving into the tundra between Contwoyto Lake and Bathurst Inlet during the spring of '59.

During the winter of 1959 and the spring of '60, a similar pattern, only slightly shifted westwards was repeated by a herd of about 25,000.

From this season on until the survey field work, no large herd passed by or wintered closely to any of the major settlements in the survey area.

Recent hunting practice of the Dogrib, the economic and conservationist implications of various administrative measures taken and the current ecological role of the caribou in current Dogrib economy will be assessed in Chapter 7.

Moose have historically been far less important as a source of meat than caribou. They occur throughout the Dogrib territory and provide a welcome occasional addition to the local diet. They are of course taken whenever met with. Lately moosehide, which had always been an important source of leather, being much tougher than caribou skin, has been used for attractive vests and jackets, which fetched high prices from tourists, particularly if it had been chrome tanned in the south. Contrary to caribou, moose usually spend their entire life within fairly small areas. It prefers low river and lake basins as well as swamps and in feeding shows a predilection for woody browse. Adult males range from 1,000 to 1,600 lbs. During the field work several instances came to attention of moose having been shot by natives, who only took home some of the choice parts of the carcass, leaving the rest as well as the skin to spoil. As it certainly does not constitute an important part of the diet, particularly in the main settlements, it would probably on the whole more valuable as a resource if left for tourist hunters, who could infuse some cash through hiring of guides and equipment, in addition to ensuring full retrieval of carcass and skin for the community.

There appears to be some indication, that in earlier times wood buffalo occurred in the southern and western parts of the survey area. Re-introduction of buffalo into these areas, utilizing surplus stock from Wood Buffalo Park should certainly be very seriously considered, as they could provide an additional easily harvestable source of meat as well as contribute to increased tourist and sport hunter attraction of the area.

D. THE FUR BEARERS

In the survey area as well as in surrounding ones the economically most important fur bearers are muskrat and mink, of which the former also contribute significantly to the meat supply during the season, as carcasses are frequently eaten. Depending on changes in numbers taken and on changes in prices per pelt either species may lead in total revenue in any given year. Next in importance are the foxes, total revenue from which approximates half of that from either of the two preceding species. About 90% of fox revenue is accounted for by white fox, the rest by red, cross, blue and silver in order of importance. Next are marten and lynx, the pelts of which still bring over \$1,000.00 into the region for each species. Total yield from beaver is between \$600.00 and \$800.00 annually for the whole region. Totals then rapidly decline for the less important species, which are weasel, otter, wolverine and squirrel in order of importance. Other species that occur and which are taken when encountered are black bear and grizzly bear, wolf and even an occasional coyote. None of these however play any economic role.

Muskrat pelts used to fetch between \$.90 and \$1.15 and at such prices were able to bring approximately \$8,000.00 to \$16,000.00 into the Dogrib communities, depending on hunting conditions. Very recently prices however have dropped to below 80¢ per pelt and at that value, particularly as at the same time transfer payments in money and in kind increased substantially, hunting activity declined. Some of the best ratting country is close to the major settlements, Fort Rae and Lac La Martre. To offset some of the price decline of the pelts, commercial utilization of the fine-grained, tender dark red meat with its wild duck taste for gourmet products should be closely investigated, particularly as it already is well known in many major American cities as 'marsh rabbit'. Alternatively, considering that the local muskrat take amounts to the equivalent of at least 20 lbs. of meat per year per capita for the Dogrib population, increase of local utilization, through provision of community freezer space, could certainly conserve cash resources as well as lessen the demand for expensive caribou hunts, the surplus meat yield from which is currently often negligible in spite of the number of animals killed. Presently the majority of carcasses are certainly wasted.

Mink prices varied recently from \$19.00 to \$26.00, totals averaging over several years muskrat totals though in any given year totals are frequently inversely related. As the mink's favourite food is the muskrat, the habitat of the two species largely coincide. This means, again, that the largest numbers are

taken by the residents of the two major settlements, while the other settlements are outside good muskrat and mink country. Best areas are the swampy low-lands on both sides of the North Arm, the Frank Channel area, the swamps between Lac La Martre and Riviere La Martre, the Grandin Marshes and the swamps in the triangle between Fort Rae, Lac La Martre and the Horne Mountains.

The Dogrib communities that lose out on muskrat and mink are compensated however by having the much better fox areas close by. Though the various coloured foxes occur throughout the area, their numbers and the revenues from their pelts are not high and white fox yields are best on the edge of or out in the open tundra. White fox pelts brought in recent years between \$19.00 and \$11.00 and total takes varied from 150 to 600 annually for the whole tribe. Marten, being in the survey area predominantly dependent on squirrels, stick to coniferous forest areas and within them seem to prefer those with some higher open ridges. The best marten areas locally are therefore the Horne Plateau, to which some Lac La Martre people go annually on an approximately 1 month marten hunting trip via Weyburn Lake, Pine Creek and Willowlake River, and the Cartridge Mountains between Lac La Martre and Grandin Lake. The latter area also is visited almost annually from Lac La Martre for marten trapping via Riviere Grandin, Lac Grandin, continuing towards Etna Lake through some good mink country and further to another very good marten area between Etna Lake and McVicar Arm, returning via Hottah Lake and the Camsell River route. Lynx, which have brought lately between \$9.00 and \$13.00 per pelt, are subject to wide annual fluctuations in yield which for the area ranges from \$200.00 to \$1,500.00. The wide fluctuations in lynx catches have been documented Canada-wide over centuries and locally there is still the belief that lynx populations migrate, though the variations have for some time now been proven to be related to snowshoe rabbit cycles.

Total beaver take in the area has not amounted to more than \$800.00 annually for some time now, with prices per pelt varying from \$8.00 to \$11.00 and numbers taken from 50 to 120 annually. There seems to be little doubt that the beaver potential of the area as a whole is badly underutilized, which is due largely to increasing population concentration and to increased general sedentariness. One good traditional beaver trapping area is along-side the northeastern slope of the Horne Mountains into which the Lac La Martre people get, again following the Weyburn Lake Pine Creek route, but turning southeastwards into Horne River instead of going into the Mountains. On this trapping trip they usually return by bus via Fort Providence. The second major beaver area - northwest of Lac La Martre, which used to be trapped from the old settlement site at the entry of Riviere Grandin into Lac La Martre, is nowadays hardly trapped at all.

Weasel, otter, wolverine, wolf and squirrel hardly ever total more than \$1,000.00 annually for the whole area.

Black bear occur throughout the survey area and are taken when met, for meat as well as the skin. Grizzly bears occur in the area hunted by the Snare Lake

group, who do however seem to be somewhat afraid of them and try to keep out of their way. All bears still seem to be the object of local superstitions, their presence might, however be considered a potential tourist or sport hunter attraction.

E. BIRDS

Game birds are still taken by local people in considerable numbers for meat. The main reason for that is probably that they can usually be had with very little effort and seasonally are quite plentiful close to the settlements. Records kept are by all concerned admitted to be extremely unreliable, the figures reported by Indians are considered to be very much on the low side. With this in mind the annual take by Dogrib Indians is likely to be between 2,000 and 5,000 ducks of various species, 1,000 to 2,500 grouse and 2,500 to 4,000 ptarmigan. These birds are all plentiful enough that even with these numbers killed annually there is no danger of over-hunting. Only a few dozen geese are taken annually as the lakes and waterways of the area are off the main flyways.

A word should perhaps be said about the bald eagles nesting in the area in view of the public concern over their declining numbers. During canoe trips in the course of the field work, about a dozen nesting couples were observed on central and upper Russel Lake and on Slemon Lake. However, they appear to nest in even larger numbers along the shore and on the islands of the northern half of Lac La Martre, where occupied nests were noted every few miles of shore line. No doubt many others nest along other lakes in the area. However, considering their concentration on northern Lac La Martre, their protection should be taken into account in any schemes to develop commercial or sportfishing or fishing lodges in this part of the lake. The numbers of eagles there could certainly be a powerful attraction for tourists and birdwatchers while on the other hand there is the danger that greatly increased human activity on that part of the lake might drive many of them away.

F. FISHES

That the Dogrib Indians who were at least as late as the last century predominantly dependent upon caribou for food are now a predominantly fish-eating people - as least as far as their food is of local origin - is certainly beyond question. This change in food habits was accurately forecast as early as 1898 by Frank Russel, who held that the ultimate destiny of the Northern Athabascans - he referred here to the Dogrib, having wintered at Fort Rae in 1893 - 94 - was to become fishermen. Though this is certainly what has happened, there appears to be some doubt whether Russel was correct as to the cause of that change. He attributed it to the extermination of game birds and mammals which he predicted to be the end result of the introduction of improved firearms. It appears more likely, however, that at least as important as factors were the increasing population concentration, fast population growth due to the medical services provided

on an ever increasing scale during this century and the increasing availability of welfare benefits.

The most important species are whitefish, laketrout, inconnu, and burbot, with pike, walleye and ling playing minor roles as coarse fish and arctic grayling being available in some locations for sport fishing. At Lac La Martre it is quite noticeable that many of the people will eat only whitefish and inconnu and feed all trout to the dogs if they cannot sell them to a tourist.

In 1962 a detailed survey of the domestic fishing in the Rae trading area gave the following results:

Results of Indian Affairs Branch Survey of 1962 Domestic Fishing for Rae Trading Area. Asterisk indicates position recorded from Gazetteer

No.	Location	N	Lat.	W	Long.	Number at each location	
		O	'	O	'	People	Fish Caught
1	Slemmon Lake	63	07	115	55	13	3,700
2	Lajeunesse Bay	63	05	115	37*	75	21,900
3	Shoti Lake	63	08	116	28	51	5,600
4	Marian Lake Village	63	03	116	19	73	7,120
5	Trout Rock	62	28	114	58	41	15,500
6	Island Village	63	00	116	17	11	7,100
7	James Lake	63	00	116	26*	1	2,000
8	Mattberry Lake	64	18	115	47	21	1,800
9	Faber Lake	63	55	117	05	26	7,600
10	Hislop Lake	63	31	116	55*	17	4,100
11	Camsell River	64	17	117	22	2	1,200
12	Basler Lake	63	54	115	49	27	1,300
13	Rayrock	63	31	116	42	8	...
14	Winter Caribou Camp	63	40	113	55	...	...
15	Ghost Lake	63	51	115	10*	16	1,800
16	Fort Rae	62	50	116	03*	98	14,300
17	Old Fort Pt.	62	40	115	50*	33	9,200
18	Stagg River	62	34	115	44*	18	2,000
19	Stagg Lake	62	52	115	29*	28	6,400
20	Lac La Martre	63	07	117	09	129	43,300
	TOTAL					688	155,920

The original table contained figures of dogs kept for each group as well as annual estimated fish requirement for each group on the basis of 2 fish per day per person and per dog. Average weight per fish for the above count was 3 lbs. The result was of course a deficiency of fish caught as compared to fish required. As it is the considered opinion of the survey that this conclusion does not hold for the survey period in any case, the figures for dogs and for fish required have been omitted. There were certainly some complaints by Rae Indians

concerning insufficient fish, blame being put most frequently upon the commercial fishing in distant parts of Great Slave Lake, which allegedly drain the fish population out of North Arm. Extensive tagging experiments have proven however that the fish populations of Great Slave Lake are quite sedentary. Moreover it became quite obvious in the course of various canoe trips out of Fort Rae, that many local fishermen neglect to tend their nets properly and regularly, letting large proportions of their catches spoil in the water. This observation was born out in discussion with experienced local informants. Moreover, the dog population has significantly declined since the time of the fishing survey mentioned, though it is still excessive in comparison to the needs of the people, particularly of those of Fort Rae itself. The number of fish given above, which may be considered to represent yield from minimum effort for most groups, thus represents approximately 500 lbs. of fish per year per head of current population.

It must be stated again most emphatically in conclusion, that there is no reason whatever to believe that local fish resources are in any way inadequate for local needs, that on the contrary any local complaints in this department may be safely attributed to nothing but a combination of indolence, lack of fore-sight and reliance on welfare, causes which should be easy to eliminate through administrative measures combining improved education and incentives for self-help.

More details on the economic aspects of changes in domestic, commercial and sport fishing practices in the area will be given in Chapter 7.

CHAPTER 4

THE HISTORICAL BACKGROUND

A. HISTORICAL SUMMARY OF THE DOGRIB INDIANS

The Dogribs are part of the larger group of Indians speaking Athapaskan dialects which inhabit most of the wooded portions of northern Canada beyond the 56th parallel. It has been suggested that the Athapaskan languages are remotely connected to the Tibeto-Chinese-Siamese group of languages of eastern Asia. They are essentially woodland people like the Algankians further to the east who did not venture along the treeless seacoast of the Arctic and who made only short and hurried excursions into the barren lands to hunt caribou and in earlier days muskoxen. Their territories are subject to severe winters of a continental character and the most important game animals, though generally plentiful were always subject to wide seasonal variations in numbers and in movements. According to Jenness it was probably primarily for these reasons though perhaps also for others not so obvious that the Athapaskans in the centuries preceding the coming of the Europeans appear to have been continuously pressing southward.

Among the other Athapaskan groups, the Yellowknives, the Slave and the Hare have in historical times been in more or less constant contact with the Dogrib while the remaining groups such as the Nahani, the Kutchin or Loucheux, the Sekani and the Beaver are not of direct interest in the current context. In the east, though there may at times have been contact with the Chipewyans - "Pointed Skins", a Cree term referring to the way in which they dried their Beaver skins - who constitute the largest group of Athapaskans and who now occupy territories, some of which apparently were occupied by Dogribs in earlier times.

The Hare live to the west and northwest of Great Bear Lake, their territory extending in the east to a little beyond the Anderson river and in the west to the first mountain range west of the Mackenzie River. They owe their name to their alleged dependence upon the hare for food and clothing, and number approximately 750.

The Slave occupy now, and seem to have occupied since the end of the eighteenth century, a broad band of land from Hay Lake and Fort Nelson in the south, including the upper Liard valley and the West Arm of Great Slave Lake in the centre, along both banks of the Mackenzie River to Fort Norman in the North. They always stayed in the forest, clinging to the river banks, and hunted woodland caribou and moose. Their number now fluctuates around 800 though in pre-contact days some estimates ran as high as 1,250.

The Yellowknives hunted over the country to the northeast of Great Slave and Great Bear Lakes, having the Chipewyans along the southeastern limit of their

territory, Eskimos to the east and north, Hare to the northwest and Dogrib and Slave to the west and southwest. In 1823 the Dogrib defeated and almost completely annihilated the Yellowknives, surviving remnants amalgamated with the Chipewyans. They were also called Copper Indians or Red Knives - their name derived from their use of native copper - presumably obtained from the surface exposures of copper mineralization now being actively prospected near the mouth of the Coppermine River. Like the Chipewyans, they were edge-of-the-woods people spending their summers on the barren grounds hunting caribou and muskoxen.

The Dogrib: "At the end of the eighteenth century a western group of Dogrib seems to have shared with the Slave the country between Lac La Martre and the Mackenzie River and a band that derives its origin from both these tribes hunts in this territory today. Another band, a mixture apparently of Dogrib, Slave and Hare, hunts and traps around Great Bear Lake, carrying its furs to Fort Norman while two small groups of families, who appear to be part Dogrib, part Yellowknife, hunt along the northeastern part of Great Slave Lake and trade into Fort Resolution. The country between Great Slave Lake and Great Bear Lake seems to have been the home of the Dogrib for at least two centuries." There appear to be some indications that Dogrib lived southeast of Great Slave Lake, that is, between that lake and the Dubawnt River during the seventeenth century. It appears that only during the last hundred years the main body of the tribe started to centre around Rae, on the North Arm of Great Slave Lake.

The Dogrib called themselves 'Thlingchadinne' or 'dog flank people. Other names by which they were known were 'Alimouspigut' or 'Attimospiquaies', which were also said to mean dog ribs and their English and French names 'flancs de chien' or 'plats cotes de chien' were translations of their own designation. This name derives from an old legend, which was passed on by Petitot:

The copper having been discovered by a Dene woman, another unmarried woman of the Yellowknives was living by herself with her brothers. Once, a stranger, reported to be a nice and handsome fellow, arrived in their camp.

Upon the suggestion of her brothers, she got married. But while she was sleeping with her husband, she suddenly found out that he had disappeared. At this moment she heard a queer noise, like a dog gnawing a bone. Everybody woke up, and started a fire to look for the dog, but they could not find anything. They went back to sleep. As soon as darkness had returned, the same noise was heard again. Now one of the brothers threw his axe in the direction from which the noise came. A painful squeal followed. Another fire was started quickly, and there, covered with blood, lay a nice big dog which had been killed.

The stranger was never seen again.

So, it was realized that this dog which as a man during the day was married to the sister, during the night had been changing himself into a dog. As

this must have been an enemy, they drove their sister away out of fear.

She went quite far in an easterly direction and lived in the deserts of the Coppermine River where there are no trees and no trails. But she was resourceful enough to live by herself, trapping and fishing.

Some months later, she gave birth to six little pups. Naturally, she was ashamed, but as she loved her little dogs very much, she hid them in a big purse and fed them every night.

Once, coming back from a fishing trip, she saw around the ashes of the fire, babies' footprints. Well, she thought, they are like their father: as soon as they leave the darkness, they become human beings. The day after, the same thing happened. So she tied a long babiche to the lacing of the purse and pretended to go trapping. But she remained close to spy upon her little pups. As soon as they were out of the purse, they became little boys and girls. Now she pulled the babiche, but before the purse was closed, three of them had had time to get back into it. She killed these three and kept the three others.

The two brothers got married to their sister and she gave birth to many children. This is how the Dogrib got their name, because their ancestor was a 'man-dog'. (According to one legend, as soon as men perceived the daylight on the day the sun was created, they tried desperately to go back into the darkness. They became birds, fish or quadrupeds according to whether they were looking for the darkness in the air, in the water or in the depth of the woods.)

In his 'Histoire de la Nouvelle-France', Charlevoix is the first writer to mention the Dogrib. He gave as their territory "the steppes bordering the western shore of the Hudson Sea, along the Danish and the Seal River." (The Danish River is now the Churchill River.) Both Charlevoix and Petitot seemed to think that the Dogrib originally were living to the south and east of their contemporary territory. A few centuries previous they would then have moved along the edge of the woods as far as Churchill, only to be expelled by the Chipewyan and be forced back along the way that they came. Jenness presents some alternative explanations for the early accounts of Dogribs in the Churchill region. Between 1819 and 1836, Franklin, Dease and Simpson found them east and northeast of Great Bear Lake. It would be at this period and before that the 'ridge line' referred to by Petitot would have constituted the southern boundary of Dogrib territory. Soon after, following their extermination of the Yellowknives, they must have moved to extend their territory to its current southern limit at Great Slave Lake. They had already occupied this territory when Petitot visited them in the 1860's. At this time, Petitot reported more than once, they had an almost religious dread of the Eskimos. On the basis of his observations in 1864, Petitot divided the Dogrib into four major bands: - the Dogrib of Great Slave Lake, - the Dogrib of Lac la Martre, - the Dogrib of the steppes or the people of the spring tides (this apparently refers to a group of about 600 centered around Rae Lake, - the Dogrib of Great Bear Lake.

Estimates of past numbers of the Dogrib tribe vary. Mooney estimated in 1928 that in 1670 there were about 1,250 of them. In 1858 Ross gave their total number as 926. Morice in 1906 estimated 1,150. Even today some Dogrib recount stories of the vast numbers of their tribe in pre-contact times. However it seems reasonable to believe that the whole tribe never amounted to more than about a thousand and that very likely their total number was always much smaller than that in earlier times.

Jenness mentions that all Athapaskan tribes were divided into several independent, practically leaderless bands, named generally after the territories in which they hunted. This however, did not appear to be the situation at the time of the survey, during the summer of 1966. Leaders, particularly in the smaller settlements, seemed to be extremely strong, in fact during one visit to the Rae Lake group, the people did not want to answer any questions at all as their chief was absent. When the camp was revisited later while the chief was present, there were no difficulties in communicating with the people. Even in the major settlements of Rae and Lac La Martre, there is still a strong tendency particularly among the older people not to choose chiefs that can speak English in order that they may be less open to influence from Eurocanadian society. These chiefs still play a very strong role. It appears, however, that among many of the younger people quite different views prevail.

B. THE EARLY HISTORY OF TRADE AND SETTLEMENT

The first fur trading settlements in the Great Slave Lake Area were established during the middle of the eighteenth century at Fort Resolution and Big Island Fort. Expanding from there, traders reached Yellowknife and Dogrib territory during the latter part of the century. The factor controlling location of the first posts on North Arm appears to have been the dominance during this time of the Yellowknives over the Dogribs, the former managing to interpose themselves as intermediaries in the trade of white agents with the latter or at least to control direct contact. The first two trading settlements on North Arm consequently were located considerably to the south of the later ones.

One of these two settlements was located on the western shore of North Arm near Old Fort Island. Whether its establishment actually preceded the establishment of Old Fort Providence or not remains open to question as no records exist showing who owned it or when it was in operation. However, in 1789, Mackenzie had described Old Fort Island as an excellent site for a settlement because of the excellent fishing and the good wood supply on and near it. Perhaps the explanation lies in the fact that as far as historical records are available, caribou were always more plentiful on the east than on the west side of North Arm and native transportation technology would tend to favour location close to good caribou rather than to good fishing grounds, particularly if the yield of the latter apparently did not differ significantly among a wide variety of potential sites on North Arm. (Appr. Location of site 60° 19' N and 115° 13' W).

Old Fort Providence was built in 1790 by the Northwest Company on the eastern shore of North Arm as a result of an agreement between Mackenzie and the Yellowknife Indians reached during the council of 1789. No trace is left of it now and there appears to be some doubt as to its exact location. The location appears to correspond with one marked with an X on Peter Ponds map, apparently reached in 1787 by a trading party from "Slave Fort". In 1820 Franklin gave as the location $62^{\circ} 17' 19''$ N and $114^{\circ} 9' 28''$ W - but that would put into the waters of North Arm on a modern map. The actual location seems to have been a few miles to the east of the entrance of Yellowknife Bay at approximately $62^{\circ} 16'$ N and $114^{\circ} 03'$ W. Upon establishment, this fort seems to have been for some time the centre of the North West Company's trading activities in the area, though as early as 1791 Mackenzie's nephew Roderic made a trip there with messages for the Yellowknives pointing out that the company's continued occupancy would depend upon the success of the local fur trade. Though initial volumes of fur traded appear to have been adequate, the role of the Fort gradually seemed to have shifted to one of provisioning post for traders going further afield. In 1820 Franklin observed that it had been erected for the convenience of the Copper and Dogrib Indians, who generally brought large quantities of reindeer meat, but few furs to trade. In this account of Franklin there is also an interesting reference to small numbers of moose and buffalo on that side of the lake. Old Fort Providence was ordered closed in 1823 and was abandoned at the time of Franklin's next visit in 1825.

One of the factors contributing to the decision to close old Fort Providence may have been the virtual annihilation of the Yellowknives in the short war between them and the Dogribs in 1823 in the course of which the latter drove the former from the caribou hunting grounds bordering North arm and overturned their supremacy for which Franklin had remarked as late as 1820. It appears that only a few Yellowknives escaped to some of the rocky islands of the bay and that their annihilation would have been complete except for the intercession of some white traders of the Hudson's Bay Company.

The Hudson's Bay Company opened their first post, initially as a provisioning post, on the North Arm and called it Fort Rae after Chief Factor Dr. John Rae, who had become well known as a result of his travels in search of the Franklin expedition. At the time of the establishment of the post, 1852 at Rae Point ($63^{\circ} 22'$ N and $67^{\circ} 42'$ W) it was located on an island, separated from the mainland by a narrow channel, which however during the 1870's was closed up by silt and vegetation.

The island, now the peninsula, is shaped like a crescent, open to the north, consisting of a ridge of silurian sediments, the only ones lying within the crystalline shield rocks in this area. The Dogrib names for the location were translated either as "island hill post" or "mountain island". At the time of the establishment of the post, the wood supply in its immediate environment was plentiful as were the fish immediately offshore. The post was located on the south-west corner of the island. As the post lay well to the north of the main fur trade route through the Great Slave Lake Area, it received only relatively

few visitors during its early years but lying alongside one of the main migration routes frequented by the barren ground caribou in those days, it was well positioned to serve its initially primary purpose as the main provisioning post of the Hudson's Bay Company for the Mackenzie Delta. Petitot mentioned that in the 1870's the post looked like any other commercial post of the North West and that it distributed yearly over 400 packages of caribou dry-meat, that is about 4,400 pounds of ribs and as much dry meat. Duchaussois mentioned that after the establishment of the post in 1852, when the caribou herd passed by both in the fall and in the spring, the Dogribs brought in 8 to 10,000 caribou carcasses annually and traded them as fur was traded elsewhere. From Fort Rae provisions were shipped to Fort Resolution, where they were issued to the crews of the York boats, on which the northern trade then depended. Petitot also mentioned that when Father Grolier visited the post in 1859 as the first missionary, that a free trader was located there in addition to the Hudson's Bay Company. Of interest is his note that in those days 12,000 Dogribs were said to have visited the post, a number soon reduced to 788 by the Fort Rae sickness' apparently smallpox. Though in this context, Petitot considers Dogrib territory to extend from the Mackenzie River to Hudson Bay below 64° N, the large population figure reported prior to the epidemic is quite impossible. Similar exaggerated reports of earlier population densities were made by Dogribs in the course of the field work, but though there is no reason to doubt the occurrence of a serious epidemic, it appears for theoretical as well as empirical reasons improbable that earlier native population densities in the Mackenzie District, or for that matter throughout the Northwest Territories were any higher than they are today, on the contrary, they may on the whole have been expected to be somewhat smaller. In the case of the Dogrib Indians it appears safe to assume that pre-contact population in the area now occupied by them was stable at a figure somewhat below 1,000. There certainly was not in the first decades of the post's existence any permanent Indian settlement of any consequence surrounding it. The only reason for visits by the Indians was the exchange of goods.

During the International Polar Year of 1882-83 Fort Rae was chosen as a field observatory site, as it then was the nearest settlement to the North Magnetic Pole. Accurate meteorological, magnetic and aurora observations were carried out. The post was described by the leader of the expedition as consisting of only some half dozen log cabins in addition to the store.

In 1879 a permanent mission was established at Rae Point close to the Hudson's Bay Company post. Though the soil was very stony, the missionaries cleared a small patch for cultivation and were quite successful growing potatoes, turnips, cabbages and other vegetables.

In the course of the second half of the 19th century, emphasis in trading activities gradually changed from caribou meat to fur. The causes for this are not altogether clear, but among the most important ones were probably shifts in main caribou migration routes and technological progress in the form of the introduction of the steamboat in Mackenzie River navigation in 1886. With the

relocation of this post, in 1906, described in the following chapter, the modern pattern of settlement and population distribution began to emerge. Some remnants of the old Fort Rae, collapsed and collapsing cabins, the old cemetery and a mission cross remain till today. Vegetation gradually encroached again upon the cleared areas. Some of the cabins in relatively good condition were apparently used by an occasional hunter or trapper until very recently. The site is still quite picturesque, and some thought might be given to the development of a tourist camp there, perhaps in conjunction with a small historical park preserving the atmosphere of a typical trading post in a few restored buildings.

Very soon after regular trade commenced across and beyond Great Slave Lake, some traders appear to have reached Lac La Martre. Though it is certain, that the North West Company established a post there quite early and that this post was kept open only a very short time, it has been impossible so far to establish exactly when it was opened and closed. The first traders seem to have reached the area in 1785 or 1786 and gone there regularly from then on and though Mackenzie made no mention of it in his report of his journey down the "Grand River" during the year 1789, it appears that the North West Company post at Lac La Martre was opened during that year in order to relieve the Indians there of extreme hardship. It may have been established either by Leroux during his excursion from the main Mackenzie expedition or by some other North West Company trader after Leroux met again with Mackenzie on the latter's return to Fort Chipewyan. Leroux had met there 18 Slave and 4 Beaver Indians who had bartered to the former five packs of fur - mostly marten - who told him that their relatives had many more skins to trade. In 1820 Franklin heard about the Lac La Martre post during his stay at Yellowknife Bay. It appears, however, that the post had not been open any later than 1796. Today there is no evidence where on Lac La Martre that old post had been, whether on the southern part of the Lake somewhere near today's settlement or on its northern shore, at the mouth of Riviere Grandin, at the site of a more recent, now abandoned, settlement site which would have been closer to better beaver and marten country. Apart from the reference by Franklin, the only source of information regarding the early Lac La Martre settlement are the letters of W. F. Wentzel.

C. THE DEVELOPMENT OF THE CURRENT SETTLEMENT AND POPULATION DISTRIBUTION PATTERN

By the end of the nineteenth century four separate groups of Dogribs with distinct trading patterns and occupying and wandering over reasonably well delineated separate areas while still maintaining close cultural and familial ties had become discernible. All were oriented towards Marian Lake through the various river and lake systems spreading out from it which they used as their main routes of travel (See chapter on communications and transport). The first group lived on the shores of Marian Lake and hunted primarily in the immediately adjoining areas and in the country to the west of it towards and into the Horne Plateau. To it corresponds today the group living at Fort Rae and the two small settlements

at the northern end of Marian Lake as well as the small group on Frank's Channel. The second group lived along the shores of Lac La Martre and Lac Grandin using the old Riviere La Martre and Marian River route to bring their furs to Fort Rae to trade and corresponding to the group now occupying the Lac La Martre settlement. The third group lived and hunted along the Marian River up to its source and - across a short portage - down the Camsell River system towards Great Bear Lake. From this group some families appeared to have split in 1914 to trade into Fort Norman instead of into Fort Rae, possibly moving eventually to settle in Fort Franklin. Today the group is represented by the small settlements on Hislop Lake and on an island in Rae Lake, from where they still trade into Fort Rae following the Camsell River - Marian River route. The fourth group lived and hunted over the area to the east of the third group towards and into the barren country. Its descendants now live in the Snare Lake settlement and travel to trade at Fort Rae via the Snare River and Russel Lake.

Petitot had, in 1864, estimated the total Dogrib population at 788, all of whom traded into old Fort Rae, making usually one trip in the spring and one in the fall and spending the rest of the year on their hunting grounds. By 1893, only two white men, the Hudson's Bay post manager and Father Roure of the mission of St. Michael Archangel, remained at old Fort Rae as permanent settlers. As about 1880 the independent trading firm of Hislop and Nagle, in competition with the Hudson's Bay Company, had established a post on the southern shore of Marian Lake, thus shortening the trading trips of their Indian customers, and as a number of Indians had started to build houses around this post, a move of Fort Rae to its present site had become almost inevitable by the end of the century.

The Hudson's Bay Company post at old Fort Rae was not only being outflanked by the competition but the old site itself had lost most of its initial attractions. After a visit in 1893 Russel on its windswept, barren character, all wood having been stripped in the vicinity until all fuel had to be hauled by dogsled for 5 miles, and only the fishing in front of the post remaining plentiful and reliable. As mentioned above, caribou migration routes appeared to have shifted somewhat earlier and in any case, caribou meat had ceased to be significant for trading purposes.

Thus in 1906 the Hudson's Bay Company abandoned the old post and moved approximately 18 miles north to establish a new one at the present site of Fort Rae, next to the post of their competitors, Hislop and Nagle. The mission followed and within ten years, according to old RCMP reports, the old site had been abandoned by all but one old Indian.

Though for purposes of trade the new location offered certain advantages over the old one, the permanent Indian community developing around the trading posts and the mission was in trouble almost from the start. The first Mounted Police patrol visiting in 1910 reported only about 20 permanent Indian dwellings "perched on an inhospitable looking shelf of rock, entirely without shelter". Due to the failure of the caribou herds to pass by the site almost all the Indians

were reported as starving, though father Roure mentioned that this had been the first time the caribou had failed to come since he came to the area 42 years ago. Since that time, complaints about the lack of shelter, lack of caribou and starvation among the Indians appear to have become regular features in any report on Fort Rae. It appears justified and appropriate at this time, therefore, to pull together some of the bits and pieces of information relating to the historical development of settlement in the area and engage in some speculation.

First, the inevitable conclusion of the author: it may be held that no Dogrib community based on traditional cultural values and on the exploitation of renewable resources of any size exceeding 100 to 120 persons (the case of Lac La Martre taken to be the limiting case) has proven or is likely to prove viable in the long run. A further condition for the viability of smaller communities is held to be the absence of a roadlink to the outside and the absence of any resident white population due to the latter's propensity to become a reliable source of unearned income. How can so harsh a conclusion be derived?

By putting the available historical data on settlement development in the right order and perspective, it should become obvious.

1. Prior to the expansion of the fur trade into Dogrib territory there were no permanent settlements at all, the population consisted of small, fully nomadic groups following in their migration patterns those of the caribou, and though occasionally one or even a few individuals may have perished, no stories or tales of protracted large scale periods of starvation have been passed on, which, in view of the fact that disastrous events among primitive people tend to become parts of their folklore, may be taken as *prima facie* evidence that such events did not take place.
2. The fur trade, prior to the 20th century, though enabling the people to achieve probably the highest material standard of living possible of attainment within their cultural framework, led to the establishment of trading posts only, the location of which could easily be shifted in accordance with conditions of trade and secular shifts in caribou migration patterns. It is to be noted that fishing was excellent at all post sites and that records generally stress that declining productivity of local fisheries nowhere took place and thus was in no instance a contributing cause to post re-location. Traders did not try to act as welfare agents, though they were not blind to individual cases of acute distress, which was always relieved, but by sticking to a thoroughly businesslike attitude maximized the total welfare of the tribe without endangering the survival of cultural values.
3. Settlements began to grow up around trading posts, as soon as in addition to one white trader, other white agencies established themselves. Thus the growth of the current settlement of Fort Rae may be interpreted as being due on the one hand to the competition of two traders, vying for the loyalty as customers and fur suppliers of the members of the tribe and employing at times methods akin to those now referred to as lock-in contracts

and on the other hand to the entry of the missions which were committed to the principle of ideological conquest and thus to the introduction of a relationship between Indians and whites significantly different from the one introduced by the traders. Trader-Indian relations were of necessity voluntary in character on both sides individually independent and based on the principle of exchange, which cannot take place unless each partner to it is convinced that by engaging in it he will be better off after it has taken place than before, and in which neither party need be concerned with the way of life or the beliefs of the other. The missionary-Indian relationship, being aimed at the acceptance of doctrinal values of one group by the other in the absence of a mutually beneficial exchange relation, could only be brought about by substituting dependence of some form or other for independence. To achieve dependence, a naturally inhospitable site was of course superior to a hospitable one - and inability to adapt to changing caribou migration patterns would contribute to increasing dependence. The question remaining here is only why starvation was a problem at Rae in spite of not only adequate but plentiful fish supply practically at every resident's doorstep. Caribou are unreliable at Lac La Martre - but fish are plentiful and consequently the people are generally well off. At the time of the survey field work, complaints about the scarcity of fish around Rae were heard frequently - on the other hand, frequent checks of nets during canoe trips showed that many of them contained many decaying fish, evidence that residents were not bothering to lift them regularly, although they were within a radius of less than a mile from the settlement. It does not appear that threatening starvation in spite of plentiful and easily accessible food supply can be explained by anything other than indolence arising out of the availability of the means of subsistence through even less effort: i. e. the means of subsistence being looked upon as free goods made available by 'The Great Pumpkin'.

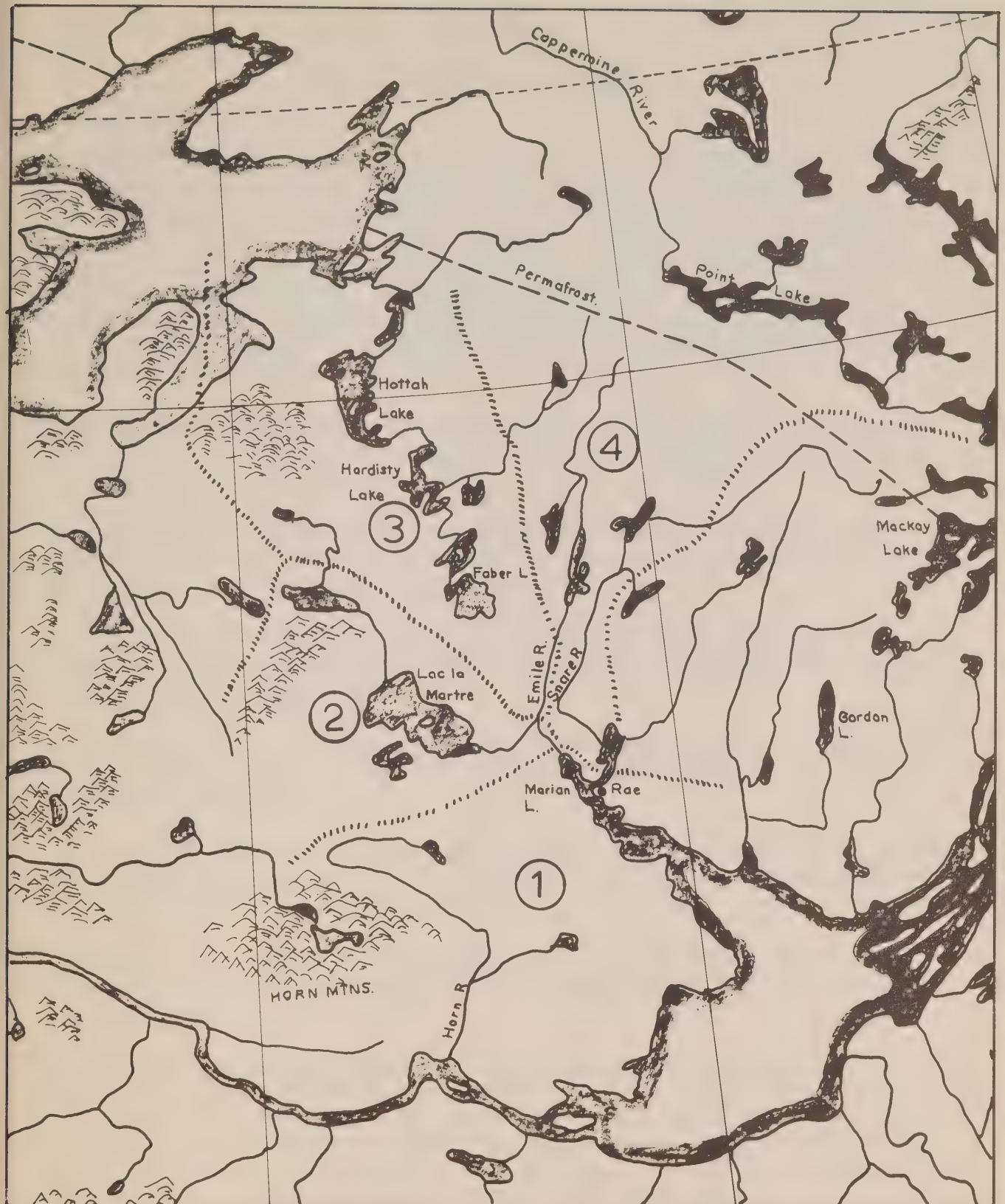
4. Of the other settlements, Lac La Martre seems to have accomplished the move from the traditional Dogrib hunting economy to one based primarily on fishing. Lac La Martre never had any resident white population for any length of time, no road link to the outside and thus its inhabitants neither had easy access to outside welfare agencies nor had numbers of already welfare-oriented kinsmen from Rae any access to the village, preventing its growth beyond the carrying capacity of the lake or beyond a size at which traditional social structure would necessarily break down. As the other smaller Dogrib communities now existing are not permanently viable within either available cultural framework (see below) there appears to be a good case for continued non-intervention by white agencies in Lac La Martre: that means no road link, no commercial fishery, no additional white residents apart from the one missionary there now whose approach is compatible with the preservation of individual independence, and no project officer. Lac La Martre can serve, then, for perhaps another generation as a refuge for traditionally oriented elements of the Dogrib tribe lessening the pains of transition, though, let it be understood, the disappearance of traditional Indian culture is considered to be inevitable in the long run (see Chapter 8).

5. Fort Rae then, not having either resources or attitudes about and within it to grow, has as the only factor apparently favouring its continued existence the mere fact of its existence. Its only future, considering available natural and human resources as well as the causes of its origin and the virtual disappearance of its original reason d'etre, is as a secondary service centre for an intermediate period until the growth of Yellowknife exerts sufficient pull to bring about its disappearance or until the discovery of a large economically exploitable mineral body somewhere else within Dogrib territory, causes another re-location.

To return, after this speculative digression, to the main line of description; after the first Police patrol in 1910, mentioned above, annual patrols visited Fort Rae until a permanent post was established in 1927. On the occasion of the 50th anniversary of the First Polar Year, the British Polar year Expedition of 1932-33 again established a scientific observatory at Fort Rae, with a sub-station at the site of old Fort Rae for better correlation of some meteorological and astronomical data, with those of 1882-83. After some finds of gold and pitchblende around the south-eastern extremities of Great Bear Lake became known and began to be worked about 1930, Fort Rae saw a short period of some prosperity and rising hopes of development. For some years it was used as a float-plane base on the flight-path to the mining area at which miners and prospectors stopped off when making their trips in or out. Hopes were short-lived, however, after the gold boom at Yellowknife, starting in 1935, turned that community into the air communications centre of the North. In 1939 the St. Michel Archangel Mission erected the large and well equipped Faroud Hospital at Rae which continues to serve the whole area until today and the last 15 years have seen the marked increase in government activities and investment in housing and service facilities which dominate the life of the community today.

The settlement of Lac La Martre as it exists today is of quite recent origin, and the school, teacherage, church, patrol cabins have all been built within the last 15 years. As mentioned above, there used to be another small settlement site at the northern end of the lake. However, all of its buildings have burned down and all the people who used to live there have moved to the current site. A few trapping cabins in various stages of disrepair are scattered around the lake and are still used occasionally. At the time of the survey field work, Catholic service was held periodically whenever a priest from the Rae mission could fly in, the teacherage had been unoccupied for a year and the only permanent white resident was a minister of the Intercontinental mission who had recently built a house for himself and his family a few hundred yards from the main settlement. Though the people at this settlement are still quite self-supporting and independent, having evolved a viable semi-indigenous mode of existence for a limited number under what should be considered highly unstable limiting conditions, long-term survival at the site of a permanently viable indigenous community appear problematical.

Even less need be said in this context of the other 5 sites of permanent cabins, which might with some stretching of terminology be termed settlements. Two of them - at the north-east and the north-west corner of Marian Lake respectively - will doubtlessly soon succumb to the pull of the main settlement of Rae. The group in the north-west corner of the lake is of the Rae group which is the most advantageously situated one in regard to access to high-yield trapping areas. Of the other groups, the one which might with most justification be considered as inhabiting a settlement proper is the Snare Lake group - though the site is picturesque and though originally the location was doubtlessly fairly well chosen in respect to caribou migration routes, no economic base of any kind exists or is likely to be brought into being. The abandonment should be encouraged by not beginning to provide any services whatever beyond those already provided. The same applies to even greater degree to the other two cabin sites - Hislop Lake and Rae Lakes - where two sites were chosen for building construction rather arbitrarily for no other reason than that at the time the decision was made, temporary fishing camps happened to have been located nearby for a few seasons in succession.



MAP 5:

DOGRIB GROUPINGS, CA.1900.

CHAPTER 5

THE CURRENT SETTLEMENTS

The current actual distribution of the Dogrib Indians does not coincide exactly with what used to be considered and is still referred to as Dogrib Territory. Both Petitot and Jenness gave them in earlier times a much wider distribution than they have now, Petitot considering their territory to stretch from the Mackenzie River to the shores of Hudson Bay, and Jenness from the Mackenzie River to the Dubawnt River. Today their potential land use area reaches roughly from Yellowknife to Great Bear Lake and from a line a little west of Lac La Martre and Lac Grandin to the edge of the Barrens to a zone somewhat to the northeast of Yellowknife.

The following are today the settlements of the Dogrib, excluding Yellowknife, which was not covered by the survey, though some Dogrib or part-Dogrib live there and others frequently travel there for work or trading:

Fort Rae or Rae, located on the Southeastern shore of Marian Lake at an elevation of 517 feet at $62^{\circ} 48' \text{ N}$ and $116^{\circ} 4' \text{ W}$, had a population as of July 1st, 1966 of 350 males and 362 females, totalling 712.

Lac La Martre located on the southeastern shore of Lac La Martre at an elevation of 890 feet at $63^{\circ} 12' \text{ N}$ and $117^{\circ} 15' \text{ W}$, had a population of 68 males and 68 females, totalling 136.

The Snare Lake settlement, located on the north shore of that lake at an elevation of 1184' at $64^{\circ} 11' \text{ N}$ and $114^{\circ} 4' \text{ W}$ had a population of 34 males and 35 females, totalling 69.

The Rae Lake settlement on the southern shore of a fairly large island in that lake at an elevation of 696' at $64^{\circ} 5' \text{ N}$ and $117^{\circ} 38' \text{ W}$ had a population of 44 males and 36 females, totalling 80.

The Hislop Lake settlement on the northwestern shore of that lake at an elevation of 635 feet at $63^{\circ} 31' \text{ N}$ and $116^{\circ} 69' \text{ W}$ has a population of 21 males and 13 females, totalling 34.

The Marian Lake village on the northeastern shore of Marian Lake inside a bay a few miles from the mouth of Marian River at an elevation of 517 feet at $63^{\circ} 3' \text{ N}$ and $116^{\circ} 19' \text{ W}$ has a population of 52 males and 41 females, totalling 93. These figures include the members of a couple of families living on the northwestern side of Marian Lake at $62^{\circ} 59' \text{ N}$ and $116^{\circ} 21' \text{ W}$ near the mouth of the little stream connecting Marian Lake and James Lake.

With the completion of the construction program which was under way during the summer of 1966, all Dogrib families would live in permanent dwellings by

YEAR OF BIRTH

Ft. Rae

M

F

Lac La Martre

M

F

Rae Lakes

M

F

Marion Lake

M

F

Snare Lake

M

F

Hyslop Lake

M

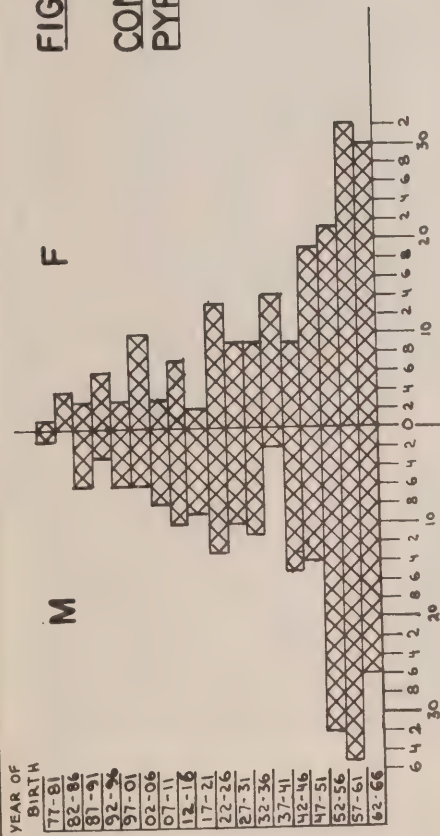
F

Note: a) Whites not included.
b) Births in 1966 only up to July 1st.

FIGURE 1

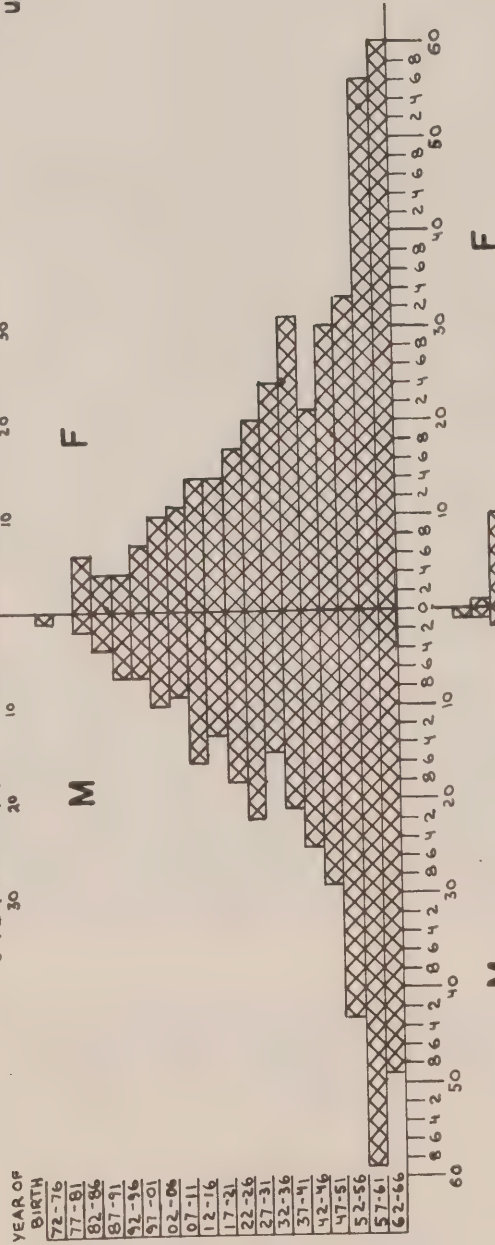
POPULATION PYRAMIDS FOR INDIVIDUAL SETTLEMENTS

Settlements excluding
Ft. Rae



Note: a) Whites not included.
b) Births in 1966 only
up to July 1st.

Ft. Rae



Survey Region Total

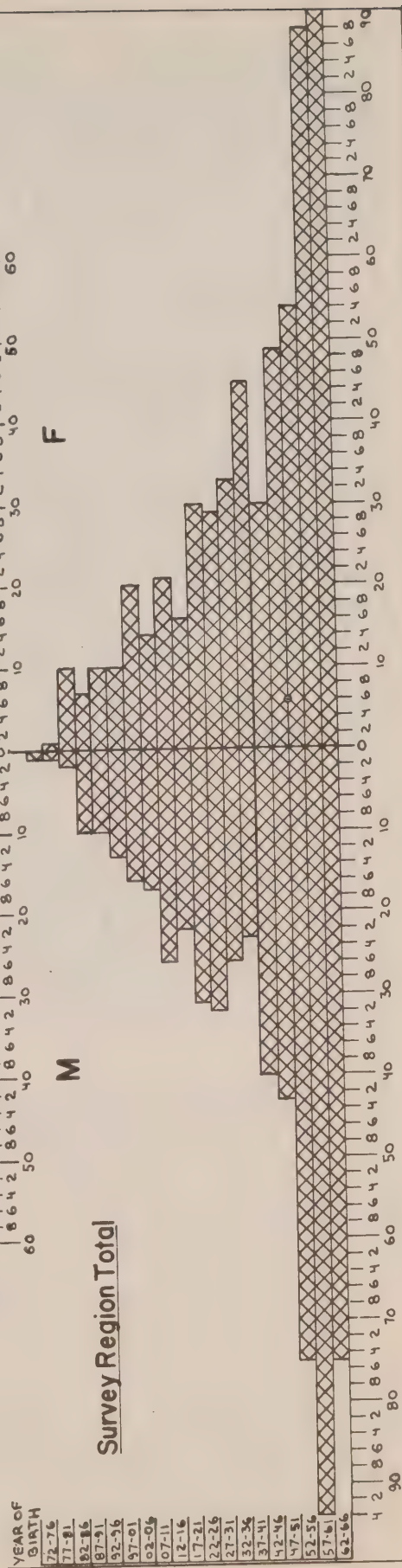


FIGURE 2 :

**CONSOLIDATED POPULATION
PYRAMIDS.**

the winter of that year. The era of nomadism is thus now definitely past, though further population concentration is still to be expected as will be discussed later. In contrast to other parts of the arctic, there is in the Dogrib territory hardly a river bank or a lake shore along which the traveller could not find some signs of old camps, small settlements or prospector or trapper cabins.

A. FORT RAE

Fort Rae is situated 7 miles off the Mackenzie Highway at Frank Channel and about 69 miles from Yellowknife. The site covers a number of rocky outcrops on the shore of Marian Lake, separated by pools of stagnant putrid water and connected by rickety wooden bridges, as well as some swampy parts adjacent. These features have caused it to be referred to as the 'Venice of the North'. Marian Lake itself is about 20 miles long and nearly 10 miles wide at its broadest and mostly extremely shallow, with a clay covered bottom. The water is consequently always muddy, making it impossible to see more than a few inches below the surface. There is little mature timber suitable for fuel in the immediate neighbourhood. In addition to the Indian population there live at Rae between 70 and 80 whites, the number fluctuating with the seasons and the high rate of turnover. Most of them are employees of the government, the Hudson's Bay Company and the Mission of St Michel Archangel. The White facilities are described under other appropriate chapter headings.

Particularly among the older members of the community and in regard to matters affecting Indian tradition, the council and its chief, Mr. Bruneau still exert an extremely strong influence. In fact it has been held that Chief Bruneau has in matters of tradition a stronger hold upon the people than any other chief in the Mackenzie. Though reference is generally made to band council meetings, it should be understood that these meetings are not conducted according to rules of parliamentary procedure, of which neither the chief nor his councillors have much idea.

The last detailed survey of the local economy was made in 1963 by Mr. E. Callas, who was then the Indian agent, and some comparison of the data he gave for that year will be attempted with those of 1966, though any conclusions must be tentative, as he included with the population of Fort Rae people from several of the smaller communities. However, two observations of Mr. Callas still are of importance, particularly as the fact that they obviously were largely ignored on the policy level may be considered the reason that not more has been accomplished in developing the community.

In the first instance, some road clearing projects, though they added money income during the winter months had been scheduled for reasons that were totally unrelated to any concept of economic development to coincide with the beginning of the trapping season. This led many regular trappers to neglect their lines in the hope that other, similar programs would enable them to earn more than they could otherwise without leaving the settlement. Road clearing programs

of course never turned out to be continuous, but by that time it was considered by most men involved, to be too late to go trapping. Furthermore, when they found out that lack of earned income was fairly easily made up for by increased welfare benefits in various forms, the final result was a generously increased welfare dependence.

Secondly, Mr. Callas pointed out as early as 1963 that the picture of grinding poverty among the Dogrib Indians, which gave rise to much concern with the welfare of this particular group did not quite correspond to the facts. At that time average cash family income from all sources would have been \$2,700, for a total of 123 family groups totalling 837 individuals or 6.8 persons per family group. This figure was substantiated by comparison with confidential turnover figures of the local stores. That means that amounts spent in Yellowknife or other centres or through mail orders are not taken into account. Neither are included expenditures for liquor by Rae Indians, which Mr. Callas checked in detail over one 3 week period. During that period such purchases totalled \$3,700.00. Mr. Callas imputed the value of game and fish taken by the group at a minimum of \$60,000.00 which if added to the cash income would raise average income per family group to \$3,200.00 minimum. Including an estimated total of the above mentioned amounts spent outside of Rae and not included in the first figure for cash income, would raise this figure by another approximately \$500 per year per family group. If then we include value of other largely gratuitous services, hospital, some of the housing, etc. we arrive at the conclusion that even for 1963 the average living level corresponded to that achievable in the south with a money income of not less than \$4,000.00 per family unit. This, considering the role and value of leisure in the community as well as the accepted living standards of the group, cannot be interpreted other than representing a considerable level of prosperity. Regarding the problems of integrating the Dogrib into a wage economy, Mr. Callas pointed out their general meekness, lack of willpower and amenability. The importance of these factors for further development programs will be discussed in more detail later.

Figures 1 and 2 give the details of the population structures of the settlements and their relations to one another. As they are self-explanatory, nothing further need be said here regarding the subject.

As of July 1, 1966, capital goods were distributed among the population of Rae proper as follows:

There were 63 adequate housing units completed and occupied, excluding a number of shacks which had been occupied only seasonally. People operated 59 dog teams, keeping a total of 366 sled dogs in and about the settlement. Individuals owned 33 canoes of various lengths less than 18', 21 canoes 18' long, 6 canoes 20' long, 5 canoes 22' long and one canoe 24' long. In operating condition were 3 outboard motors of less than 5 HP, 9 of 5 to 5 1/2 HP, 5 of 7 1/2 HP, 16 of 10 HP, 4 of 15 HP and 1 of 18 HP. That is, Rae Indians owned a total of 66 canoes and 38 outboard motors. It should here be noted that those

Indians who still go out hunting and trapping usually travel in one large canoe powered by an outboard motor, towing a very small 'hunting canoe' for setting of nets or checking of traps at camp locations. One Indian also owned a rather dilapidated truck. Total numbers of traps were estimated at about 3,000, fish-nets at 600, tents at 50, dog harnesses at 400, sleighs at 80, shotguns at 70, rifles at 250 and livable bush cabins at 15.

Total value of capital goods excluding houses then adds up to about \$65,600.00 or approximately \$1,000.00 per extended household excluding minor items such as kitchen equipment, sewing machines, bicycles, radios and phonographs etc. These latter items were not included as no reasonable estimation is possible.

Among young adults in the community between the ages of 17 and 23 years, 24 males and 9 females had completed grade 6 or more as well as some kind of vocational training and had also been in continuous wage employment for periods exceeding 6 months.

Water supply is partly by pipe from Marian Lake. This water is filtrated, chlorinated and fluoridated, but the system had at the time of the survey a capacity of only 20 gallons per minute. Other residents receive chlorinated water via governmental water truck from Stagg River and some Indians still use untreated water from the lake.

Fire protection is provided by stationary fire pumps and hoses and one water truck which is kept full at night. The sewage truck is also available in emergencies.

Local snow clearing is done by two government-owned caterpillar tractors, and two snowblowers from the Stagg River Highway depot keep the access road open.

There is a garbage dump down the road from the settlement but many Indians still just dump their garbage outside their homes. Organized pick-up is planned.

A diffused air sewage system with run-back into the Lake at the time of the survey serviced the RCMP property. All others still used septic tanks, chemical toilets or outhouses.

The Federal Day School averaged an enrollment of just over 100 in 7 grades. The hospital has 40 bed capacity. The hospital also provides some transient accommodation for \$6.00 room and board per day, which is not intended to serve tourists, however. Movies are usually shown once a week and there is a community hall as well as a softball field, a volleyball court and a skating rink in winter.

Retail prices of selected goods were as follows:

Bread per 24 oz. loaf	.25	Frankfurters, per lb.	.53
Bacon per lb.	.69	Fuel Oil, per gal.	.45
Beef, ground chuck, per lb.	.69	Leaded gasoline, per gal.	.52 or .49/barrel
Butter per lb.	.63	Jam, per lb.	.50
Cartridges 30-30 per pkg. 20	4.25	Sugar per 5 lbs.	.95
Chocolate per 4 oz. bar	.10	Milk, evaporated, per 16 oz. tin	.21
Cigarettes per pkg. 20	.35	Milk, skim powder, per lb.	.52
Coffee, tinned per lb.	.99	Men's Work Pants	4.98
Cotton print, per yard .49 -	.89	Men's Work Shirts	2.98
Detergent, laundry per reg. .42 -	.53	Men's Work Shoes	9.98
Eggs, fresh per doz. gr. Axl	.69	Women's Parkas	11.98
Electric toaster	12.95	Women's Shoes	3.98 - 4.98

B. LAC LA MARTRE

The village is about 108 miles from Yellowknife by air. It is located on a small tongue of land reaching from its southeastern shore into the Lake. The elevation is about 20 feet above lake level, mostly underlain by sand. The shoreline on the south of the peninsula tends to be marshy while on the north there is a beautiful though narrow sandy beach. The water is extremely clear and clean though it does have a slight sulphur taste, in fact there sometimes collects at the water's edge a narrow band of sulphur bloom when the wind is blowing towards shore. Contrary to some stories spread further south, however, this sulphur content does not make the water unpalatable. The village itself has an extremely clean and tidy appearance and it is fortunate that so far no prefabricated gaudy coloured government buildings have spoiled the total picture of a traditional Indian log-cabin village. In fact the traditional look of the place - provided any additional buildings are kept in style, might be turned into a major tourist attraction.

In contrast to those of Fort Rae, the people of Lac La Martre are still very self-sufficient. They are aware of this difference and consequently have a somewhat condescending attitude towards their relatives at Rae. Most families move out to various camp locations on the numerous islands or some of the long sunken eskers characterizing each during the spring, and during the fall fishing season.

During the year 1963 a survey corresponding to that made for Fort Rae was carried out by Mr. Callas for Lac La Martre. He estimated the yield of the domestic fishery at Lac La Martre to be between 100,000 and 125,000 lbs., a figure which would correspond to the observations made during the 1966 survey. Fish caught during the fall are generally frozen round on fish racks while the spring and summer catch are dried and smoked. In 1963 Mr. Callas estimated

that this settlement had an average of two moose per week throughout the year. This figure certainly has declined since then, justifying the general remarks in regard to moose made earlier, though these animals still are of a little greater importance for Lac La Martre than for Rae.

As of July 1966 there were 136 Indians living at Lac La Martre, belonging to 23 family units and occupying a total of 21 privately owned houses of native log construction. They operated 32 dog teams totalling 176 dogs. As to other capital equipment required for hunting, fishing and trapping, individuals owned 8 hunting canoes of 8', 1 of 16', 9 of 18', 3 of 20' and 2 of 22', powered by 11 outboard motors of 5 1/2 HP, 3 of 7 1/2 HP and 1 each of 10 and of 15 HP. Total numbers of nets were estimated at 110, guns - shotguns and rifles - at 48, harnesses at 150, traps at 1,400 and there were 15 tents and 28 sleighs. Total number of hunting and trapping cabins could not be clearly established due to questions as to some owners' group membership, but may be taken as about a dozen for all local hunters.

Estimated value of these capital goods would amount to a total of \$22,150.00 or to approximately \$1,000.00 per family group of 5.9 members average. Cash income from all sources averaged \$2,200.00 per family group for 1965/66, but imputed value of country food and other country produce is doubtlessly higher than for Rae. On the whole the level of living at Lac La Martre is doubtlessly higher than at Rae.

When the school is in operation there is one full-time janitor employed. Income from guiding and handicrafts is sporadic and relatively insignificant. This is mainly due to the inaccessibility of the village and not to dislike of such activities by the people. Average level of schooling of those over age 15 does not exceed grade 2 and there are only very few people who have an adequate knowledge of English.

Considering the general atmosphere of quietness, content and relative prosperity and neatness that now characterizes this village, it is extremely doubtful whether the people would be done a favour by providing a road link to the outside world. On the contrary it might be a good idea to refrain from any forced development scheme there, leaving the village as a haven for those Dogrib who want to continue to pursue a traditional mode of life but providing opportunity for those members of the younger generation who want to step into a more modern world, to move out to Rae or to Yellowknife.

C. RAE LAKES

This camp was at the time of the survey located on a small rocky island in Rae Lake and consisted of 11 family groups totalling 80 people. All were living in tents, though one man was building a house close by and three other families stayed at times in shacks they owned in Rae. Plans were being completed to build a permanent settlement for this group near that summer's camp location.

It is seriously doubted whether such a move was wise. The group had shifted location continuously for years in accordance with changing fishing and trapping conditions. A community of this size certainly can never form a viable village, and growth potential for any permanent site in the area is non-existent.

The members of the group owned 11 hunting and 9 large canoes, 7 outboard motors and operated 12 dogteams, keeping a total of 72 dogs. They had about 40 guns, 65 harnesses, 800 traps, 14 tents and 15 sleighs, and 60 nets, amounting to about \$9,500.00 worth of hunting, fishing and trapping equipment. This group is still very close to the traditional nomadic subsistence economy and an assessment of their living standard in dollar terms therefore pointless. Their chief has absolute authority. Only one young girl speaks some English.

D. HISLOP LAKE

This group is now settling down on the northwestern shore of the lake on the brow of a clay terrace. Three houses were up at the time of the survey and lumber for several more had been piled close by to complete 5 more before the end of the summer. The 34 people of this camp belong to 8 family groups. At the time of the survey they owned 10 canoes, 2 outboard motors, 9 dogteams consisting of 53 dogs, about 20 guns, 50 harnesses, 400 traps, 10 tents and 12 sleighs, and 50 nets. This would amount to about \$6,200.00 worth of hunting, fishing and trapping equipment.

As in the case of the Rae Lake settlement, it is doubtful whether the subsidization of a permanent settlement in this location was a wise move. With any kind of economic upswing in the Rae - Yellowknife area, this settlement is likely to be abandoned in the quite near future.

E. SNARE LAKE

This settlement is attractively situated at the high northern shore of the lake, where the latter makes a slight bend towards the east. Trees are sparse, though mostly quite high and well grown for that part of the country and the settlement may in fact be considered as being right on the treeline. The 69 people belonging to 15 family groups live in 11 quite well built log cabins. There is also a game-warden's cabin and little store operated by Mr. Steinwand from Rae. Both of the latter are only used or operated intermittently.

The group is, for its size, well supplied with hunting, fishing and trapping equipment. They own 11 canoes, 8 motors, operate 16 dogteams with a total of 91 dogs, and own further about 60 guns, 80 harnesses, 800 traps, 20 tents and 20 sleighs, and 80 nets. The value of this equipment is estimated to amount to approximately \$11,600.00.

The settlement is still fairly self-sufficient, though its independence from outside subsidization is even now more tenuous than that of the preceding two groups. However, provided growth is not encouraged and children are given the opportunity to attend a boarding school regularly - provision for keeping them at Rae or Yellowknife would appear to be most appropriate - the settlement may survive for a few decades yet, serving a function similar to that suggested above for Lac La Martre. The location at the edge of the Barrens may in fact be turned into an asset to attract tourists - the village itself and the immediate surroundings during the summer are quite attractive. A tourist lodge, log cabin style and operated by a local small co-operative, situated a few miles to the east of the settlement on the same shore could provide enough of a margin to supplement current cash income to keep the people living there now and not wanting to move, independent of major welfare infusions at a level of living consistent with their aspirations.

F. OTHERS

In addition to the settlements described above, there remain two others to be described. Both are located on the northern end of Marian Lake, the larger one, on the east side, inside a bay on rocky outcrops, the smaller one, on the west side on a fairly high small tongue reaching out into the lake. The 93 people comprising these two groups belong to 13 family groups and own 12 houses. They operate 13 dogteams with a total of 80 dogs, have 18 canoes and 8 motors. Other equipment is estimated at about 70 guns, 80 harnesses, 1,000 traps, 12 tents, 14 sleighs and 90 nets. Total value of hunting, fishing and trapping equipment would be approximately \$13,400.00.

After visiting both settlements and discussing their problems with numerous people locally, there is no doubt that the larger one should be phased out completely, the population encouraged to move into Rae, and vacated cabins razed as soon as possible. Morale is low and dependency on welfare appears to be increasing. Any further administrative move which might be construed as an encouragement for the people to stay there, could only compound an already acute social assistance problem. On the other hand the families living on the west side of the lake seem to be better motivated and fairly selfsufficient. They are well situated in relation to still underutilized resources. Lastly, the site could be developed somewhat, whenever a road is built from the Mackenzie Highway northwards, as such a road would definitely have to follow the western shore of Marian Lake and pass close to the settlement site.

All capital equipment data are summarized on the attached table. Interpretative problems and recommendations in regard to the future or the development prospects of the communities described will be discussed in subsequent appropriate chapters as far as they have not already been mentioned in passing.

TABLE 3

CAPITAL GOODS - SUMMARY

location	per- sons	fam. grps.	houses	tents	hunt- ing cab- ins	dog tms.	dogs	har- ness- es	sleds	trps.	boats	otbd. mtrs.	nets	guns	other	Total *
Fort Rae	712	65	63	50	15	59	366	400	80	3000	66	38	600	320	1 truck	\$ 65,000
Lac La Martre	136	23	21	15	12	32	176	150	28	1400	15	16	110	48		22,150
Snare Lake	69	15	11	20	-	16	91	80	20	800	11	8	80	60		11,600
Hyslop Lake	34	8	3	10	-	9	53	50	12	400	10	2	50	20		6,200
Rae Lake	80	11	1	14	-	12	72	65	15	800	20	7	60	40		9,500
Marian Lake	93	13	12	12	-	13	80	80	14	1000	18	8	90	70		13,400
Total	1124	135	111	121	27	141	848	835	169	7400	140	79	990	558		\$148,450

* Value of Capital Goods. Excluding Houses

CHAPTER 6COMMUNICATIONS AND TRANSPORT IN THE REGION

Since the road opened there is practically no barge traffic into Fort Rae. For passenger traffic there is a three times weekly bus service from Yellowknife at a rate of \$2.30 per person one way. The rate per person on the same bus to Edmonton is \$36.20 one way. A taxi ride Yellowknife - Fort Rae is usually \$40.00 per trip with no waiting period, and airplane charter, depending on size of plane from \$48.00 upwards per trip including 2 hour lay-over. Out of Fort Rae the plane operated by Mr. A. Steinwand to provide store service for the other Dogrib communities is often available for charter, at the same rates prevailing at Yellowknife.

Trucking, express and aircargo rates are as follows (Barge rates to Yellowknife have also been included) :

Trucking (Edmonton to Fort Rae)

Class	1	2	3	4	5
Rate (dollars/100 lbs).....	6.03	5.11	4.24	3.55	3.00

Bus (Express, Edmonton to Fort Rae three times weekly)

Pounds	0-2	5-10	10-20	20-30	30-40	40-50
Charge	\$1.60	2.10	2.95	3.60	4.50	4.95
Pounds	50-90	60-70	70-80	80-90	90-100	
Charge	5.85	6.80	8.05	9.30	10.60	

Air Cargo (daily scheduled service except Sunday)

Pounds	Edmonton to Yellowknife	Yellowknife to Edmonton
Less than 100	\$.17/lb	\$.09/lb
100 to 1,800	15.00/100 lb	8.00/100 lb
1,800 to 3,000	13.75/100 lb	7.00/100 lb
More than 3,000	12.00/100 lb	6.00/100 lb

Barge (Waterways to Yellowknife, June - October)

	Rate per cwt.
General Cargo	\$ 1.75
Heavy Weights 2,000 to 10,000 lbs.	\$ 1.93
10,001 lbs and up	\$ 2.10

The bus connection is provided by Canadian Coachways Ltd. and trucking by Grimshaw trucking regularly once a week and by Byers Trucking on demand.

Fort Rae is provided with telephone service by Canadian National Telcommunications. Telegraph messages are sent by phone to Yellowknife, from there forwarded via CNT. In addition to the restricted traffic via RCMP and Mackenzie Fire Service channels, the RC mission operates a 50 watt transmitter on a daily schedule, call signal CJS-252, on 4356 and 4270 kc., and the government another 50 watt transmitter, call signal XMH-54, twice daily on 4270 and 5730 kc. At Lac La Martre there is a 25 watt transmitter in the teacherage, with call sign XLJ-67 on 4270 kc.

Radio reception of CFYK Yellowknife is good in Fort Rae and moderately good at Lac La Martre. The nearest television station at Peace River cannot be received in the area.

CHAPTER 7

SOME TRADITIONAL TRAVEL ROUTES

In the following a short description will be given of some traditional travel routes in the region which are still used to some extent or which could be of interest for tourist development or for improvement of renewable resource utilization.

Horne Plateau This trip, which has already been mentioned, is taken by Lac La Martre people mainly to hunt marten, though beavers will be taken when encountered. There are no regular trap lines, but hunters will make irregular two or three day stops along the route at locations which appear promising. As the route is not travelled much, all the small lakes and creeks contain sufficient fish which together with occasional caribou or moose will be adequate for current needs. The trip may be undertaken either in November or in April and May. The hunters who go via Weyburn Lake, Pine Creek and Willowlake River to the Hornell Lake and Willowlake areas will usually return the same way after a few weeks, while those turning down the Horne River will continue to Providence and return by bus. The take per trapper per trip rarely exceeds 30 marten plus a few beaver. Recently four men chartered a Cessna 180 for \$100.00 to take them into the area.

Fort Simpson This trip goes through some very good beaver country and formerly many Dogrib went to Fort Simpson to trade. It now is taken only very rarely.

Cartridge Mountains The Lac La Martre people consider it excellent beaver country. Still it does not appear that this area has been trapped for some years now. Likely it was utilized from the old settlement at the mouth of Riviere Grandin. In 1966 the Cartridge Plateau was the scene of one of the worst forest fires in Dogrib Territory. As the people of Lac La Martre did not seem to be too enthusiastic about the trip, which on the map appeared quite feasible by going up Riviere Grandin, Lac Grandin and Lac Tachem it was carried out in the course of the field work and is described below.

Lac Grandin - Hottah Lake This is a continuation of the preceding route, passing flat swampy country with poor vegetation and an irregular hydrographic pattern. The forest is open and there are considerable patches of open tundra. The Dogrib usually prefer shield country to these lowlands, but according to local informants, a long dogteam trip exceeding 500 miles was made in 1962 from Rae via Lac La Martre, Lac Grandin, Hottah Lake and back to Rae via the Camsell River route. No regular trapping has been carried out in this northern part of the region for many years and animal populations and qualities of skins should be excellent. However, traces of old often used dogteam trails can still be discerned. Presumably this area was utilized in earlier days when some groups of Dogribs stayed year round in the vicinity of Hottah Lake.

Northern Lac La Martre - Lac Grandin Due to the clear evidence of previous heavy utilization and current under - or non-utilization of this area, particular attention was paid to it in the course of the field work. One canoe trip was made around all of Lac La Martre and another one from Lac La Martre to Lac Grandin.

Indians will now only occasionally set up a 2 day or 3 day camp north of a line formed by Ide, the long partly sunken esker jutting out from the eastern shore, and its projection across the lake. In 1966 no camps were set up to the north and only a few for a period of about 10 days on the southern shore of the esker or on small islands close to its tip. Only an occasional tourist would induce a guide to take him further into the northern part of the lake. Two trapping cabins at the mouth of a small creek draining a little lake near the north-western extremity of the lake are occasionally used during the winter. Between the mouths of Riviere Grandin and of the river draining Lac Tempier, on a terrace overlooking the latter river mouth are the ruins of a small settlement abandoned in 1954, which was called Egakinlin. It is a beautiful site for camping, set in extensive well drained meadows. Certainly some thought should be given, perhaps by a local co-operative, of re-establishing at least a seasonal camp there for fishing or to serve as a base for trapping and moose hunting trips. For a tourist lodge, the ideal location is also in the northern part of the lake, on one of a group of three islands near the eastern shore at approximately $63^{\circ} 23' N$ and $117^{\circ} 47' W$. There is sufficient wood nearby for the construction of attractive log cabins which would blend with the appearance of the settlement of Lac La Martre, the site is located sufficiently far from the settlement not to cause any social problems by its proximity, yet is still within the normal range of the activities of Lac La Martre residents. The setting is attractive and there is sufficient protected inshore water surface to provide excellent fishing and to enable float planes to land even during the sometimes extended periods of strong northwesterly winds which make unprotected portions in this part of the lake dangerous for small boats.

Lac Grandin is only about 65 airmiles from the village of Lac La Martre along the lake and Riviere Grandin and lies in fact on the shortest route from Fort Rae to Great Bear Lake. A succession of lakes and portages links Lac Grandin and Lac Tache and from there Great Bear Lake's McVicar Arm can be reached following the Johnny Hoe River through Lac St. Therese, through always gentle and fairly flat topography.

The drop between Lac Grandin and Lac La Martre is a little over 200 feet or about 5.2 feet per mile of river. This is not much but the slope is constant and marked in the river by eddy-currents rather than rapids. Of all the eddies only one would require a portage because of the shallowness of the water rather than its speed, all others can be passed by canoe. However, many stretches of the river are broken up into several very narrow channels, most of which are too shallow for paddling. As the vegetation along the shore is usually thick it is often necessary to wade for a few hundred yards, pulling the canoe. About four miles up the river from Lac La Martre, it divides into two arms around a low swampy island, of these the eastern arm only is navigable

by canoe. On some of the stretches through which the canoe had to be pulled, removing larger stones from the creek bottom avoided tearing the bottom of the canoe unnecessarily - but this is apparently something the Indians are reluctant to do. It should be noted that for this trip, which was proved to be quite feasible, guides from Fort Rae were used, as nobody from Lac La Martre was willing to undertake it, considering it altogether impossible. All that can be said in conclusion is that the Lac Grandin area, though accessible has not been regularly trapped for at least 25 years and not at all for quite a few of the last years, that moose are quite plentiful along the route and that Lac Grandin has not been fished since the last visit of Alaska Fisheries Ltd. and should therefore have a fair number of large fish now.

Main Trapping Routes of the Rae Lake, Hyslop Land and Snare Lake Groups

The Rae Lake group trap primarily along the chain of lakes northwards to Hottah Lake, some going even further into the Leith Peninsula, and north-eastwards towards Grant Lake and Wopmay Lake. As the area in the immediate vicinity of Rae Lake is quite rich in game, fish and fur, lying as it does on the edge of usually completely unutilized country, in many years members of this group do not make any lengthy trapping or hunting trips at all. As mentioned before, however, though these conditions assure the present group of a mode of life in accordance with their current standards, they do not provide any margin for expansion or improvement.

The Hyslop Lake group usually traps towards Ingray Lake and Mattberry Lake. As members of this group were in regard to their trapping and hunting itineraries somewhat more closemouthed than most other Dogribs, not much more than this could be established. On the whole, this small group appears to lead a quite sedentary existence.

The Snare Lake group moves mainly up and down the trough marked by Snare, Roundrock and Winter Lakes. Indin Lake is also visited, but less often, and Point Lake and the Coppermine River are visited occasionally.

Fort Rae - Gunbarrel Inlet (Great Bear Lake) The crossing of Marian Lake takes about 2 1/2 hours with outboard motor. On the Marian River, between Marian Lake and Shoti Lake there are two small portages, neither of which requires more than 5 minutes, as the canoe can be dragged on logs. All portages as far as Hyslop Lake are log covered. There are many small rapids, eddies and swirls on Marian River which might cause difficulties during spring run off but can be negotiated safely during most other times. At Shoti Lake there are 3 log cabins and there are other old campsites with tepee frames along the river. At the mouth of Riviere La Martre is another fairly large log cabin in usable condition. Near the mouth of the Emile River is a narrow stretch of rapids, over which the canoe can be hauled loaded from the shore. Further up and past about half a dozen further stretches along which a canoe must be hauled from shore, there is a small wharf that used to serve Rayrock Mine. Near the two smaller lakes to the south of Hyslop Lake, both of which provide excellent

fishing and moose hunting, there are numerous old camp sites and a few log cabins in attractive settings among white birch groves. The last portage before reaching Hyslop Lake goes through swampy country. The southern part of this lake is preferred by the Hyslop group for summer fishing. Total number of portages between Fort Rae and Hyslop Lake is 24.

Another 10 portages are required between Hyslop Lake and Mazenod Lake, one of which is about 1 1/2 miles in length. This one can be avoided by taking an alternate route requiring 3 shorter portages. There is a major portage between Mazenod Lake on the Marian River System and Sarah Lake on the Camsell River System. From Sarah Lake to Faber Lake there are no portages but five places where the canoe must be hauled for short distances. From Faber Lake to Rae Lake the Camsell River can be followed without any portages or hauls; there are however several alternate routes further east requiring short portages, all of which are well marked. This area, having been travelled and hunted over by Dogrib groups for centuries, is in fact characterized by the availability of numerous alternate routes with well defined trails and portages between most present and former settlements or major lakes and waterways.

Between Rae Lake and Taka Lake is a 30 minute portage, which parallels the winter road, over which the canoe must be carried. From Taka Lake to Lac Seguin the preferred route is not along the Camsell River, though this is a possibility, but by 5-to-10-minute portages via a number of small lakes. Lac Seguin has a sizeable colony of white swans during the summer and beaver lodges are plentiful throughout the area of Taka, Ste. Croix, Tuche and Margaret Lakes, and a number of old trapping cabins in various states of collapse can be found. No portages are required between Lac Seguin and Hardisty Lake. Along the route are a number of graves and old campsites. Two portages of 20 minutes and 25 minutes are necessary between Hardisty Lake and Lac Malfait, from which there is easy canoeing to Beaverlodge Lake. From Beaverlodge Lake to Hottah Lake's Stairs Bay the passage is not as easy as it appears from the map, the channel often being only 4 feet wide and frequently quite rocky. Travelling north on Hottah Lake, the remains of the old Beaverlodge Mine are passed. Moose and Beaver are plentiful throughout this country and there are many traces of the work camps of Alaska Fisheries Ltd., who worked this Lake recently. About 5 miles from the outflow of the Camsell River there was an old quite small Dogrib settlement, of which nothing remains but a few ruins and graves.

There are many possibilities to get to Great Bear Lake from Hottah Lake. The route easiest to follow by canoe, as it contains few portages, goes up the Camsell River to Grouard Lake, and continues into Clut Lake. From Clut Lake it is possible to continue along the Camsell River by the White Eagle Falls portage into Conjurors Bay or via a 25 minute unmarked portage into Felsenmeer Lake. This portage going through a moraine field is, needless to say, extremely difficult. From Felsenmeer Lake into Fishtrap Lake there is a 10 minute portage which is well marked and surprisingly easy. Here again the number of moose that could be observed on the trip was quite remarkable. From Fishtrap

Lake there is a 10 minute portage to Yen Lake, following the eastern branch of the winter road. From Yen Lake a 60 minute portage leads directly to the shore of Gunbarrel Inlet.

In all 48 portages were made on the field trip - but as mentioned before between most bodies of water a number of alternate routes are possible. Much underutilized country with excellent fishing along the way, some remarkable landscapes and much wildlife - beaver, moose and waterfowl - is crossed and there should be little doubt that this trip could be turned into a major tourist attraction. It offers something for fishermen, naturalist, camera enthusiasts and - in season, hunters. Return trips are possible either by alternate canoe routes or by plane, perhaps from Pt. Radium or one of the lodges and for the hardiest tourist a much longer trip via Great Bear Lake, Great Bear River and returning up the Mackenzie could even be suggested.

Fort Rae - Lac La Martre This is a fairly easy trip made frequently by local residents, particularly those of Lac La Martre. It totals about 75 miles, 19 on Marian Lake, 23 on Marian River and 33 on Riviere La Martre. It usually takes 2 days by canoe, with an overnight stop somewhere along the Riviere La Martre, preferably before undertaking the '3 mile portage'. As far as the confluence of the two rivers, the trip is identical with that described in the preceding section. The La Martre Falls portage, though following a well worn trail everywhere at least 3 feet wide, takes at least 4 or 5 hours. If this trip should be considered for tourist promotion, this portage should certainly be improved and camp sites developed. This could be done quite cheaply as the ground is on the whole level, except for the last 1,000 feet or so near the falls. At this spot are some fresh water springs and it appears to have been used frequently as a resting place. The falls themselves could be a prime tourist attraction as they look much more impressive than the falls of the Hay River along the Mackenzie Highway. The trip would be attractive to hunters who do not intend to exert themselves unduly and have only limited time available. The beginning of the hunting season coincides with the disappearance of the mosquitos, moose are particularly plentiful near the confluence of the two rivers, and ducks all along the way. Past the falls there is only one more portage of about 1/2 hour. The route then passes through a swampy lake and a short stretch of river, late in the summer usually grown in with grasses and aquatic weeds, before entering Lac La Martre. The settlement can be reached in about 2 hours with outboard motor.

Winter Lake - Fort Rae Particularly the Snare Lake group often have an autumn camp in the Winter Lake area for fishing and for caribou hunting. As it is at times the starting point for a fall trip to Fort Rae which moreover might have some tourist appeal, inclusion of a short description of the route seems warranted. Between Winter Lake and Roundrock Lake there are two portages. The site of Franklin's Fort Enterprise is located just after the first of them. From Roundrock Lake to the eastern end of Snare Lake water is continuous, but there are many shallow, more often sandy, then rocky stretches which may require dragging of a canoe when water is low. From Snare Lake to

Indin Lake a series of 13 rapids requires frequent portaging, none of which are, however, particularly difficult as the country is quite open.

After about 30 miles of open water on Indin Lake there is one portage right after leaving it for Kweijinne Lake, then a series of six rapids which can be passed in 2 portages, then a stretch of falls and rapids and some more rapids before entering Kweijinne Lake requiring another 4 portages in all. From Kweijinne Lake there is only one portage to get into Basler Lake, which is part of the Emile River system. This route there joins the Rawalpindi Lake Fort Rae route described in the next section near its fourteenth portage. The total number of portages from Winter Lake to Fort Rae along this route is 31. An alternative possibility is to go directly from Kweijinne Lake into Bigspruce Lake (no portage) and to continue along the Snare River to Slemon Lake. From Bigspruce Lake to Strutt Lake are 6 portages, one of which is at the Snare River dam. From Strutt Lake to Slemon Lake there are two more portages and from the entry to Slemon Lake there are then about 40 miles of open water before Marian Lake is reached via Russel Lake just north of Fort Rae. The total number of portages from Winter Lake to Fort Rae along this latter route is 26, which is more than are identifiable on the available maps. However, the maps do not indicate some narrows and shoals which require portaging or dragging from the shore under some water conditions.

Rawalpindi Lake - Fort Rae Rawalpindi Lake is another frequent caribou hunting and fishing camp location. The trip from there to Fort Rae, like the one described in the preceding section may be suitable for tourists, if one thinks of small parties, dropped by plane at the lake for a few day's fishing and then returning by canoe. From Rawalpindi Lake to Grenville Lake there is one 30 minute portage. A long portage of four to five hours, in the course of which the canoe can however be reloaded three times to cross three small lakes is required to reach Mesa Lake. At the end of this portage is an old camp ground at which a treaty between Dogrib and Chipewyan was concluded in the last century. Between Mesa Lake and Treaty Lake is another 3 hour, 3 section, portage broken by two lakes a little larger than the three on the preceding portage. On this part of the trip the first trees begin to appear - the tree line is crossed. In the southern part of Mesa Lake is an island on which most of the Dogrib group waited for the return of their representatives that had gone to the northeastern shore of Mesa Lake. From Treaty Lake a 20 minute portage is crossed to reach Emile River. Along the Emile River System the following portages have then to be passed: to Rodrigues Lake a 10 minute portage around a small rapid; then along the river a 2 section portage for the first of which about one hour and for the second of which 30 minutes are required; one of 15 minutes and another one - Snake's Rock Portage - of 5 minutes and another one of 25 minutes before reaching Boland Lake in which there is a channel supposedly dug long ago by Indians; from there on no further portages to Gosson Lake, from which there is a 1 hour portage to Norris Lake; from the south end of Norris Lake to Mattberry Lake one 20 minute and one 15 minute portage and another 15 minute one from Mattberry to Basler Lake. There are several portages

connecting Basler Lake and Kweijinne Lake and thus the Emile River and the Snare River systems. Between Basler Lake and Labrish Lake there is a quite difficult 75 minute portage - the last of the long ones on this trip - then a narrow channel through which the canoe must be hauled from shore for 25 minutes and then the 15 minute Emile River Falls portage. From Labrish Lake there are only 7 very short portages along the Emile River and then only the ones on the Marian River - between Shoti Lake and Marian Lake. Total number of portages on this trip is 25.

CHAPTER 8

FURTHER NOTES ON CURRENT ECONOMIC ACTIVITIES

In the following, it was considered unnecessary to repeat in detail material on current economic activities that has been related throughout some of the previous chapters. Data presented can only serve to illustrate some qualitative arguments, as it is impossible to present on any topic reliable time series which could be used for statistical analysis. Under the subsequent headings, therefore, only some additional information will be presented in order to round out the picture of the subject matter as well as some summary comments.

A. HUNTING, TRAPPING AND FISHING

There has recently been much discussion not only in Dogrib but in many other northern Indian communities of the merits of organized caribou hunting trips. They are being viewed by some as a first step towards commercial harvesting of caribou on a scientific basis, as an alternative to outright welfare payments, as a means of continuing an important Indian tradition in a more modern form or as a combination of these purposes. Details vary, but what all attempts at organized caribou hunts so far had in common were the facts that a leading role is played by an administrative officer, that considerable exogenous funds are required, that many of the men in a settlement spend usually several weeks on it and that they return with some caribou meat after killing a considerable number of animals. The most important question is whether the time and money spent, the meat recovered and the animals slaughtered relate in a way justifying the exercise. Needless to say, the men participating are enthusiastic about it.

A hunt from Fort Rae was accompanied in 1966 (August 20 to September 13) to try to assess the value of such an enterprise to the community. More important perhaps than some of the quantitative data collected, was recognition of the fact that statements made in regard to caribou hunting in 1961 by June Helm which relate to conditions in the late '50's are no longer valid. It is not true any longer that the people are more in need of skins than of meat. Prices offered in '66 for hides (\$3.00 for an adult, \$5.00 for a calf) were generally considered to be too low to bother at all about collecting skins and preparing them. However, towards the end of the hunt, some hunters decided to take a few back with them. 'White' clothing is being preferred more and more and it is to be expected that in the very near future caribou skins will be only needed for a few mukluks, some handicrafts and the occasional skins by a few remaining serious trappers. The only justification for the hunt would then be to get meat and it was estimated that the last of it would be gone within a week to ten days from the return date. Miss Helm also stated quite definitely, that the Indians are not interested in an 'organized hunt' with the game warden accompanying them and would not accept advice on the presence or absence of game in certain

areas. This is no longer true either. Had the hunt not been organized and aircraft charter provided in 1966, there is some doubt whether any people from Rae would have gone on an extended caribou hunt at all. They still would have preferred not to have the game warden with them perhaps, leaving them freer to be wasteful, but they certainly prefer relying on flight reports on caribou location to looking for them themselves on the ground.

The hunt in the fall of 1966 from Fort Rae occupied 45 men for 25 days. Most of them had started out towards the hunting area by canoe. Approximately \$200.00 were furnished by various government agencies for ammunition and outboard gas. During the absence of the men, welfare payments for the dependent members of their families remaining in Rae materially exceeded the average. Payments in Rae above the usual average for the months of August and September amounted to about \$1,500.00. Two charters of an Otter by the Game branch to furnish information, bring back meat and bring some supplies to the hunting party cost \$828.00. Another charter of a Howard paid for by local Indians, also to bring back meat, cost about \$400.00. A total of 261 caribou were killed, but it must be remembered that the men involved in the hunt lived rather high on caribou meat during the exercise. What then could we estimate the value of the meat returned to camp to be, estimating about 80 lbs. of edible meat recovered per caribou - which under the conditions of this particular hunt is, if anything, rather high and including an estimate of alternative cost of \$3,500.00 on the basis of the men involved working for half the time they spent hunting for a minimum of \$40.00 per week, as well as assuming about 30 caribou eaten by the men during the trip (this is an absolutely minimal estimate)? Under the assumptions made, the result is about 18,000 lbs. at a little under 40¢ per lb. If this hunt is looked at this way under the extreme assumptions made, one may consider it justified, at least until such time as rising opportunity cost, increases the cost per pound substantially. It is felt however, that such a view is mistaken. That the meat brought back did not last long was born out by checks made just before the end of September. This is largely due to the Indian's notorious lack of foresight in the presence of plenty. If we consider then that all the time and money was expended to provide meat for the settlement for 10 days only - it was obvious that many dogs ate caribou meat too after the return from the hunt - it certainly appears questionable whether repetition of the enterprise is justified. Considering the latter view the more relevant one as well as the apparent reluctance of most of the men from Fort Rae to go by themselves, it is suggested that the practice of organized hunts along the lines of the one described be discontinued. Organized caribou hunting should be taken up again at such a time as it can be carried out on a fully commercial basis, perhaps within the framework of a local co-operative, with hunters being paid by the co-operative and all meat and hides becoming the property of the enterprise for resale for cash back to the members of the community.

There seems to be little doubt that particularly as far as Fort Rae and Lac La Martre are concerned, many relatively easily accessible areas with good moose populations are underutilized. More systematic moose-hunting on a continuing basis to meet a larger proportion of current meat requirements is indicated.

If here, as in other traditional pursuits, selling rather than free sharing among the people becomes the rule, hunting, particularly if combined more systematically with trapping could provide a meaningful and lucrative existence for several of the older more traditionally inclined men of the settlement who now are to some extent beginning to become subject to a sense of uselessness. Members of the other settlements generally appear to be able to satisfy their meat requirements adequately by following still fairly closely their traditional hunting patterns. They do not require any assistance as yet and none should be offered unless at a future date it should be requested. As soon as they cease to be self-sufficient they should be encouraged to move to the main settlements rather than that the number of subsidized settlements be enlarged.

Little need be added to what has already been said about trapping. With increasing ease of obtaining the means of subsistence by other means, the opportunity cost of trapping is increasing rapidly, making it worth while to go out pursuing it as a full time activity for fewer and fewer people. It appears that a pattern similar to that in the northern provinces will be established, where a fairly steady level of fur output is maintained through the efforts of a very few full-time trappers and occasional trapping by many others to supplement other sources of income. The underutilized areas have already been indicated. The establishment of a network of trapping cabins by a local trappers' association, which should be established as a business entity separate from a co-operative pursuing other activities and utilizing the professional advice of the officers of the Game Branch should be considered. In this context, an attempt should also be made to reduce the number of dogs kept to the minimum operationally necessary and to encourage proper use of motorized winter transport as an alternative to dogteams.

There is locally some concern about the expanding activities of commercial fishing firms, particularly of Alaska Fisheries Ltd. It is felt in this regard that provided present regulations as to commercial fishing and as to reserved lakes are kept in force, such concern is unjustified, that in fact expansion of commercial fishing activities can only be beneficial to the local population provided that care is taken that local people are hired to the greatest extent possible. The most important area of expansion would be in the domestic fishery of the Lac La Martre group. If their activities are extended over the whole lake, if provision is made to sell the increased catch at Fort Rae and possibly as far as Yellowknife and if particularly the Fort Rae dog population is materially reduced, local fish resources are more than adequate for local requirements. It is suggested that no attempts be made to start a canning operation in the area but to handle fish exported from Lac La Martre in the traditional manner, i. e. dried and smoked in summer and frozen in winter. As a general rule it is felt, that wherever there should be in the area a conflict between potential use of a lake for sport fishing and for commercial operation, the decision should be in favour of the sport-fishing operation as this in the long run is certain to lead to the infusion of greater amounts of cash into the local economy and is not subject to the same degree of competitive pressure as a large commercial fishing operation in the area.

B. HANDICRAFTS

In the years preceding this survey a substantial handicraft business was built up in Fort Rae almost single handedly through the efforts of Sister Blanche Matte. By September 1966, annual sales of handicraft were estimated to exceed \$10,000.00. Discussions with members of other settlements made it apparent that particularly at Lac La Martre and at Snare Lake there existed a considerable potential for the expansion of Dogrib handicraft production. Sister Matte accompanied a subsequent survey flight to discuss details with the local women. It should here be noted that Sister Matte had overcome the two most serious hurdles that would face any handicraft instructor or commercial buyer among the Dogrib. She spoke Dogrib fluently and through patient effort had been able to have criticism of individual pieces or work by Indian women accepted - the usual reaction is that they take such comment personally, snatch their work away and do not produce anything else for a long time. Consequently, the quality of handicraft offered for sale at Fort Rae had reached a high level and people produced items that really sold - there was not the accumulation of unsaleable items that is unfortunately characteristic of so many other Indian handicraft outlets. As a result of the field work a list of material and equipment required to expand operations immediately, prepared together with Sister Matte and not exceeding a few hundred dollars, was forwarded to Ottawa with a request for immediate action. This was not forthcoming, in fact not a single item on the list reached the settlement and the demoralizing effect of this lack of action was considerable. The handicraft situation was discussed again in 1968. In the meantime, as the result of decisions that are irrelevant to detail here, control of the handicraft project had passed from Sister Matte eventually to some members of the Company of Young Canadians. Their presence in Fort Rae resulted in the total collapse of handicraft production as a source of revenue by the summer of 1968. The potential is certainly present within the Dogrib tribe for the development of a handicraft production of about \$30,000.00 to \$40,000.00 annually. The events of the past years alluded to will certainly necessitate several years of great effort to reach such a goal which with somewhat more farsighted action on the part of the Federal Government could have been reached by now.

C. THE ETSAREDI COOPERATIVE

History

The concept of a Co-operative for the Dogrib Indians in Fort Rae was introduced in 1960. However it was not until October 1963 that a study of the movement was begun. That year a study group was formed consisting of Father Denis Croteau, the Superior of the R. C. Mission, Mr. P. Murdock, Regional Administrator, Father Jean Amourous, Mr. John (Ron) Williams, Administrator of Fort Rae and Constable Tricker of the R. C. M. P. His Excellency, Bishop Paul Piche, highly encouraged the project.

In September 1964, the "R. C. Mission Workers Organization" was formed. The first step had been taken. Meetings were held and the purpose of the organization was explained to the people. Six men, Ernest Camsell, Philip Beaulieu, Johnny Bishop, Benny Lafferty, Philip Huskey and Philip Dryneck entered the movement. They were engaged in cutting wood for fuel, fishing for the needs of the village, and in garbage disposal.

Shortly after the organization got under way, Father Croteau left for his vacation in Montreal and then to Rome for his second noviciate. He was replaced by Father Jean Amourous, who speaks Dogrib fluently. The organization got a loan of \$3,000.00 from the Episcopal Corporation in Fort Smith, Northwest Territories. A truck was bought and two men were trained to drive it. A few months later Benny Lafferty left the organization but Joe Migwi and Isidore Wellen entered it.

Dogrib Handicraft

Sister Blanche Matte arrived in Fort Rae for the second time in 1963. Four months later, Sister Superior Lucienne Hebert asked her to visit the poorest ones and to look for those who need more help. At the same time she started to interest the Indian women in handicrafts.

The Grey Nuns in the hospital and also Miss Michelle Duquette, a French Canadian Nurse from Montreal, recently arrived in Rae, had visited the Indians in their homes and were appalled by their miserable existence. They saw two and three families living together in small houses. In one house six people slept in one bed and eleven others slept on the floor. There was very little furniture and meals were eaten off the floor. This problem the Missionary Sisters were determined to solve. Sister Matte and Miss Duquette discussed the families' problems as they watched the Indian ladies come to the hospital begging for food, clothes and other materials. Women were encouraged to sew, to provide for their needs as the Sister was trying to sell their crafts. Money was needed to buy material for handicrafts, so the Sisters mended old clothes donated by charitable persons, then sold them to the Indians for five, ten and twenty-five cents apiece. The Sisters found that the Indians preferred to pay for their clothes rather than accept them as gifts, as this helped them to retain their pride and dignity. The money was used for buying material for handicrafts as well as beds, tables, chairs and cupboards from the secondhand shop in Yellowknife. The furniture was then repaired, painted and sold to the Indians.

In August 1964, a plane crash brought Mr. Emile Gautreau into the picture. He is a resident of Calgary, working for the Forestry Department. His partner had been killed in the crash. Mr. Gautreau spent a couple of days recuperating at the hospital. After hearing the problems of the Indians, he bought all available handicrafts in the purpose of finding markets in Calgary for Dogrib Indian Handicrafts. Shortly afterwards orders began to arrive from Calgary. The women were filled with enthusiasm and worked diligently. They could sew at

home and keep their children; as they had a bit on money to help provide for their families.

In the Spring 1965, the Oblate Fathers and Mr. Pete Murdock, the Regional Administrator, requested the presence of Mr. Jack Veich in Fort Rae. He spent the month of April attending meetings in the hopes of establishing a Co-op. He explained to the Indians, with the help of an interpreter, the purpose of a co-op and how to operate it. The name chosen by the people for the Co-op in Fort Rae, is "Etsaredi", meaning, "helping each other". Since that time the Indians have been thinking about the Co-operative movement and are trying to understand it better.

Plans for the future

1. Interest the women in berry picking for commercial purposes.
2. Open a second hand shop.
3. Set up a place in the village where women may mend and wash clothes.
4. Find new markets for handicrafts as well as retain present outlets.

The Indians in Fort Rae, greatly appreciated the work of Sister Blanche Matte, is doing for them. At an impressive ceremony on July 23, 1965, she was admitted to the Dogrib Tribe by Chief Jimmy Bruneau, and given the name "Donra Sacra'a", interpreted as "The Rising Sun". The honor was bestowed because of her work among the native women. She has helped them to develop their crafts and has taught them with patience and kindness to improve their condition.

After the tourist season, the women were really busy filling the orders for Christmas.

At the end of the year 1965, the Handicraft books showed: \$10,000.00 of sales and a profit of \$167.68 was given back to the workers as their share of profit according to their work.

On January 18, 1966, twenty persons signed the application forms to be incorporated. The meeting was presided by Mr. Bill Hagen, Supervisor of the Co-ops of the Northwest Territories. Within a month, on February 13th, the certificate of Incorporation under the name of: Etsaredi Co-operative Association Ltd. and all papers concerning the Organization of the Co-operative with the Standard- bylaws was received from Ottawa. The Incorporation Certificate was dated, Ottawa, February 7, 1966.

Current Status

At the time of the survey, the co-operative was directed by a Community Development Officer, under contract with the Canadian Government with the Co-operative Union of Canada (at a salary of appr. \$900.00 month) and an assistant (at a salary of about \$700.00 month). Sister Matte in effect continued to develop and oversee the handicraft programme on a voluntary basis. Three local men were employed on a permanent basis, one averaging \$70.00 per week, one \$55.00 per week and the third one \$50.00 per week. Two local girls were employed on a regular basis at \$100.00 per month but though the work was permanent, the girls changed almost continually.

If these local employees could be motivated sufficiently, they could participate in a vocational training programme, during the course of which they would receive a training salary of \$30.00 per week for a period of six months, after which the co-operative would be committed to hire them at a previously agreed upon wage. These employees would, however, have to work steadily for 5 to 6 weeks previous to the training programme in order to qualify and at the time of the survey none of the local people involved appeared to be quite able to accept the idea of a long-term commitment to steady wage-work.

The Wood-Cutting Project

Wood-cutting is carried out on a co-operative basis for all dwellings at Fort Rae. By August '66, 731 cords of wood had been cut, sufficient for the subsequent winter. At a base price of \$7.00 per cord the Co-operative had paid out \$5,117.00. The wood was hauled to Fort Rae in September and October by the male employees of the Co-operative with the Co-operative owned truck. For this and casual labour connecting with unloading, wages of \$550.00 were paid. Starting with the beginning of winter, the wood is delivered to the houses at \$18.00 per cord or \$10.00 per half cord. If a household prefers, they can order a whole 3-ton truckload (5 cords) at a time at a rate of \$16.00 per cord and pay off at the rate of \$10.00 per week. The funds used to pay for firewood are derived almost entirely from welfare payments in the case of most of the families, i. e. almost the entire amount paid for wood-cutting originates in welfare payments. The profit per cord for the co-operative - which is of course re-distributed to the members - is only about \$0.20.

Report On Handicraft Production During The Year 1965

Total Sales	\$10,000.00
Main Outlets	Friends, Tourists, Indian Agency

Craft Workers Wages

Over \$50.00	17
Under \$50.00	106

Total Production Costs

Material:

Furs	\$ 592.00
Hides	\$ 781.50
Beads	\$ 189.90
Silk	\$ 129.64
Stroud	\$ 322.96
Labour	\$3297.30
Finished Products	\$2324.45
Miscellaneous	\$ 730.50
	<u>\$8368.25</u>

Overhead Costs

Rent	\$ 115.00
Maintenance	\$ 162.75 plus Sister's (free daily work.

Mark Up

Irregular: 10% to 25%

Inventory

Handicraft on hand	\$ 795.00
Material on hand	\$ 946.00
Accounts Payable	Cash
	\$ 614.00
	Material
	\$ 300.00
Accounts Receivable	\$ 995.75
Re-distributed Profits	\$ 167.68

When the handicraft program was turned over to the 'Etsaredi Co-operative Association Ltd.' on April 1, 1966, total assets were \$4,200.63, total liabilities \$781.00.

At the time of the survey field work, there seemed to be little doubt, that the handicraft program was one of the most promising activities started in the community and that production could easily be tripled. Consequently, immediately after the end of the field work a list for material and equipment necessary for such an expansion, which could have increased business volume to between \$20,000.00 and \$30,000.00 p. a. within an extremely short time and which totalled not more than \$1,500.00, was passed on to the Industrial Division. It was not possible to accede to these urgent requests by the local co-operative and by the summer of 1968 the Fort Rae handicraft program - partly as a result of this failure to act quickly and partly as the result of a takeover of the program by unsuitable and inexperienced people from the 'Company of Young Canadians' had virtually collapsed.

Other Activities

The co-operative engages to a very limited extent in the purchase and resale of dried fish at the rate of 5 large or 6 small fish per \$1.00 buy and 4 large or 5 small fish per \$1.00 sell. No figures regarding the volume of this trade were available, however, it appears to be quite small. In August of 1966, women and children had also brought 500 lbs. of cranberries to the co-operative for re-sale on a commission basis. Again, no figures on prices were available.

D. PERMANENT AND OCCASIONAL WAGE EMPLOYMENT

The bulk of the money income accrues to the residents of Fort Rae proper. In the following, a breakdown of money incomes is given according to sources for the period October 1965 to October 1966. In several cases detailed information received from local informants was not well documented. Even in those cases however, orders of magnitude may be taken as correct, as several sources were checked against each other. There can be little doubt that total cash inflow into the area exceeds one half million dollars. A lot of casual earnings by individuals going for short periods to Yellowknife or acting as guides for tourists coming into the area on their own, cannot be guessed at. As regards fur income, which is covered elsewhere, there is also some leakage, mostly via Yellowknife, estimated at between 10% to 15% of the total which goes unreported. It may be argued that a considerable portion of regular wage income earned by whites flows out again. All of it was included, however, as it is earned in the area and as any figure purporting to gauge the magnitude of such outflow would be a straight guess incapable of any substantiation. Moreover, some of the earners of such incomes are definitely permanent residents, while others, who do not consider themselves to be such, certainly could eventually be replaced by local people.

The Hudson's Bay Company

Two local girls are employed in the store steadily at \$200.00 per month each. Starting salary for this work is \$170.00 per month. One clerk is employed on a long-term contract at an estimated \$300.00 per month. Various Indians are employed on an hourly basis for the unloading of trucks from Grimshaw and for chores around the store. Annual total for casual labour wages is approximately \$500.00, which might in future increase slightly. The annual wages paid by the Company, including the manager's earnings, would thus be in the \$15,000.00 range.

Army's General Store (A. Steinwand, Prop.)

Two local girls are employed steadily at up to \$150.00 per month. One male Indian also has steady employment at approximately \$250.00 per month. A white bookkeeper, who also looks after the post-office earns about \$300.00 per month. In addition to the main store at Fort Rae, Mr. Steinwand has a small store each at Lac La Martre and at Snare Lake and intends to put up a third one at Rae Lake settlement. These three settlements are visited about once every two weeks, more often at times, depending on the level of Indian activities, and during each visit the local store remains open for several hours. For these visits a Cessna 180, owned by Mr. Steinwand and flown by a pilot under an arrangement with Ptarmigan Airways of Yellowknife, is used to take in either the proprietor or the clerk to conduct business as well as new supplies and special orders. This plane is also available, when not used for business, for other local charters by residents or tourists.

This operation appears to have a slightly higher volume of business than the H. B. C. store. It serves some of the functions of a bank for many of the Fort Rae population. Some prices appear to be slightly higher than those at the H. B. C. store but the store is open about 18 hours a day, seven days a week. The store has most of the characteristics of any general store in a southern rural community, but it provides, in addition, the local plane charter service and delivery to prospectors or tourists in the area.

Prices at the other three communities serviced or delivered to camp locations are of course higher than at Fort Rae by an amount calculated from the cost of the flight and the weight of the load. The price of goods flown in by Cessna 180 at Lac La Martre would, for example, be arrived at as follows: 44 air miles at \$0.50 per mile, doubled to allow for return flight amounts to \$44.00 for the flight divided into a full load of 600 lbs. gives \$0.07 1/2 per lb; i. e. a 5 lb. bag of flour retailing at \$3.95 at Fort Rae would cost \$4.33 at Lac La Martre. As another example, outboard gas sells for \$2.00 per gallon at Snare Lake.

Mr. Steinwand estimates that 50 flying hours or 4,500 miles per month are the minimum required to break even in operating the Cessna 180.

Outside Business

It is estimated that purchases from Eaton's in Winnipeg and Simpson's Sears in Regina amount to about \$200.00 per week or \$10,000.00 per year. It is not at all unusual for local people to send out mail orders c. o. d. when they have some cash on hand and then spend their money otherwise before the arrival of their order so that many orders have to be returned after a waiting period for inability to cover c. o. d. charges.

A fair amount of income earned particularly by residents of Fort Rae is of course spent at Yellowknife. Not even an estimate of the amounts involved, is however, possible. For much of the population, the biggest attractions in Yellowknife are the beer parlours and the liquor store there, and hardly a week goes by that not some residents manage to 'go to town'. During the period of fieldwork, only too many instances were brought to attention of local people having only minimal incomes calling a taxi to go to Yellowknife (\$40.00 for the one-way trip) for no other purpose than to visit a beer parlour or the liquor store.

Game Warden

The local game warden draws a salary of about \$5,300.00 per annum plus about \$90.00 per month Northern Allowance. His local Patrol Man is paid \$1.95 /hr for a 48 hour week from May to December and \$1.95 / hr for a 40 hour week from January to April, averaging about \$4,550.00 /year plus Northern Allowance.

Mackenzie Forest (Fire) Service

During the forest fire season of the summer of 1966 there occurred in the survey area 40 forest fires in the Yellowknife fire range out of which 5 were in unprotected areas; 51 forest fires in the Rae range, out of which 10 were in unprotected areas and 41 in the Snowdrift range. The total budget for fire fighting only for this period for the total area was approximately \$200,000.00. To local Indians (75 men from Rae, 25 men from Lac La Martre and 4 men from Snowdrift) a total of 250 wage cheques amounting to \$21,261.55 were issued for fire fighting services. Every attempt should be made to increase the budget of the Mackenzie Forest service for fire fighting to enable them to fight fires even in the so far unprotected areas. Particularly the destruction of caribou range at the edge of or just beyond the edge of the tree-line can, in view of the slow rate of growth of lichens, have long-term detrimental consequences in regard to caribou movements in the area.

R. C. M. P.

The salaries of the two RCMP officers stationed at Fort Rae total approximately

\$11,900.00, excluding Northern Allowances. Rates paid for casual labour are \$1.65 /hr for an interpreter, \$1.60 /hr for a guard (required every time someone is in the local jail) and \$1.65 /hr for guides, usually used for winter traveling. Total expenditures for such casual labour is \$525.00 per year.

The Fort Rae Federal Day School

Approximately \$12,000.00 per year is expended on wages for school operation and management, divided about equally between a full-time prevailing rate janitorial position and casual help funds for casual help. However, the Indian working for a full 10 months as a janitor is paid about \$5,000.00 out of casual labour funds, another \$1,000.00 being spent on casual labour during the summer months during the janitor's absence. During the 1965/66 and 1966/67 school years we were informed that the \$6,000.00 classified prevailing rate position for this job was not used at Fort Rae and no indication was given for what other purpose this position had been used.

Incomes from the six teaching positions are approximately as follows:

- 1 at \$11,000.00
- 1 at \$ 8,000.00
- 2 at \$ 7,500.00
- 2 at \$ 6,000.00

The total amount available to the community for wages and salaries for school operation and management is thus approximately \$57,000.00 per year.

Other Government Employees

At the time of the survey, the position of Area Administrator at Fort Rae had not yet been filled. This was due to the then very recent take-over of administrative duties from the Indian Affairs Branch by the Northern Administration Branch with attendant internal re-organization. Administrative functions were still fulfilled by the Indian Agent at Yellowknife, Mr. Johnson, who made regular trips to Fort Rae and the other Dogrib settlements. In previous years, an Indian Agent had been stationed permanently at Fort Rae.

The Federal Government employs at present one powerplant operator at \$500.00 per month and one labourer on a full time basis at \$450.00 per month. In addition to powerplant operation, these men are responsible for the operation and maintenance of government vehicles and for the maintenance of all Government housing. There is a full-time position for a postmaster at \$450.00 per month, this job is, however, at present being looked after by one of the clerks at A. Steinwand's General Store.

Treaty Money

Treaty money paid amounts to \$5.00 for every treaty member and an additional \$25.00 for the Chief and \$10.00 or \$15.00 for every band councillor, according to his position. In addition, fishing nets, twine, 30-30 rifle, and 12 and 16 gauge shotgun ammunition is distributed to a value of \$3.00 per head. This amounts to over \$3,000.00 per year for the whole Dogrib Tribe in materials. Generally, one net will be given to every married man or unmarried man having a dogteam; one box of shells to a single man without dogs or to an unmarried mother. Anybody is furthermore allowed to get any amounts of the above types of equipment at cost, if he has ready cash. On the average, a married man will, in addition to his treaty money, receive: one net (\$8.00 value), one box 30-30 shells (\$8.00 value) and another box of 12 or 16 gauge shotgun shells (\$8.00 value), i. e. \$24.00 worth of goods per family.

Alaska Fisheries

The summer of 1965 was the first season this company operated in the survey region. The party arrived at Rae on July 20 and left October 15. Total catch reported being 28,000 lbs, made up of about two thirds whitefish and one third trout. Ingray Lake and Hottah Lake were fished, possibly some other ones tried. The figure of 28,000 lbs was given by Alaska Fisheries, however some data found elsewhere show that 43,328 lbs were shipped from Hottah Lake between August 21st and September 24, 1965: The fishing was carried out by two men hired locally for \$0.01 /lb, food and equipment being supplied.

In 1966 Alaskan Fisheries started operations on July 15th and continued till freeze-up, hiring two local Indians under the same terms as in 1965. Lake fished were: Zento Lake (poor results), Ingray Lake (10 days), Mattberry Lake (10 days), Basler Lake (poor results), Grant Lake (good whitefish, poor trout), Crapeau Lake (good trout, poor whitefish). During this time, two planes were kept in fairly continuous operation; one Cessna 180 at a cost of \$0.10 /lb/mile and one Howard at a cost of \$0.13 /lb/mile.

Fishing operations at any lake are generally preceded by an exploratory investigation to determine whether the fish are clean, i. e. without internal parasites, and in sufficient quantity to warrant exploitation. Once started, commercial fishing in any season will generally be continued as long as the catch is sufficient.

Selling prices for fish are currently (summer '66): \$0.25 Jumbo Whitefish, \$0.21 large Whitefish, \$0.18 small Whitefish, \$0.19 Trout, any size. Direct costs, again on a per fish basis, average out to: \$0.10 transportation, \$0.02 fishermen's wages, \$0.01 fishermen's food, \$0.02 equipment and outboard oil and gas.

During the summer of '66 two people from Fort Rae were hired to make wooden boxes for packing fish. It was not possible to determine for what period or at what wages, presumably the total amounts involved were quite small.

From some parts of the Fort Rae population, complaints were heard regarding the activities of Alaskan Fisheries in lakes allegedly close to trapping areas. When pressed for details, local informants were not able to substantiate their complaints or even to define in what manner summer fishing activities influenced their winter trapping.

Faraud Hospital

Total capacity is currently 40 beds and 4 bassinettes. Beginning with fiscal 1966 the special care rate was reduced to \$8.00 per day from \$9.00 per day while the boarding rate was increased to \$8.00 per day from \$6.00 per day. 85% to 90% of all food supplies come from Edmonton by Grimshaw Transport or by bus, the rest if purchased in Yellowknife. Lately the number of patients has been decreasing every year. Hardly any T. B. cases are kept, as most of them are transferred to Edmonton.

The hospital is an Episcopal Corporation under the administration of the Bishop of the Mackenzie District and the Grey Nuns of Montreal. With the exception of personnel employed by the Federal Government who are listed under the following heading, the hospital employs 12 whites and 12 Indians. Most of the earnings of the members of religious orders are understood to be turned back to the Bishop of the Mackenzie. Functions and salaries break down as follows:

amounts quoted per month:

Administrator	\$ 250.00	
Assistant Administrator	\$ 600.00	
Nurse	\$ 450.00	These functions are carried out by the
Nursing aid	\$ 300.00	
Cook	\$ 430.00	Apparent inconsistencies in monthly
General Duties	\$ 250.00	
Laundry	\$ 300.00	earnings reflect part-time charges
Maintenance	\$ 430.00	
"	\$ 600.00	against hospital duties.
"	\$ 125.00	
Total	\$3,735.00	
Office clerk	\$ 300.00	Lay Whites
General Duties	\$ 150.00	
Total	\$ 450.00	
Nursing aid	\$ 245.00	Lay Indians
Maintenance 7 at \$125.00	\$ 875.00	
" 2 at \$115.00	\$ 230.00	
" 2 at \$ 92.59	\$ 185.00	
Total	\$1,535.00	

The apparently low rates of lay Indians should not be compared with monthly earnings in industrial or business establishments as they do not represent remuneration for comparative numbers of work hours or degrees of skill. Neither do they include imputed values for indeterminate amounts of fringe benefits not usually available from other employers.

A statistical breakdown as well as detailed cost analysis are given in Appendix A and in Appendix B respectively.

Northern and Indian Health Service

The Northern and Indian Health Service employs one medical doctor full time at Fort Rae, whose earnings are in excess of \$10,000.00 per year. A Dogrib Indian is now employed as a community health worker at an annual salary of about \$5,000.00. The doctor also employs intermittently an interpreter whose salary is about \$3,000.00 per year. This medical staff also travels regularly to the other Dogrib settlements and operates at Fort Rae in close conjunction with the staff of the Faraud Hospital.

T. Kimble's Trucking Business

The business operates 1 logging truck, 1 dump truck, 1 tractor-trailer unit, 1 caterpillar, a portable sawmill and a garage with various repair and maintenance equipment. In the course of the 1965/66 winter works program, it employed 7 Indians at \$8.00 per day for a total wage bill of between \$4,000.00 and \$5,000.00 for the period (variances in reported figures could not be resolved because of incomplete records). It was stated that the business could employ four Indians permanently, and more during periods when additional contracts are available, at between \$180.00 and \$250.00 per month. Current Indian payroll is usual between \$6,000.00 and \$9,000.00 per year, variations being due to the seasonal nature of most contracts.

The Power Plants

The Fort Rae power plant operates two generators with a joint nominal capacity of 120 kwh, which are not, however, capable of producing more than 90 to 100 kwh. During the winter of '65/'66 two motors only were in operation at any one time, the third one serving as a standby unit. The three 40 kwh units (GM Diesel) were brought from the DEW Line in 1964. At this time five Indian houses were connected up. Many of the older Indian houses do not meet minimum safety standards for electric wiring. However, all new houses (total planned at time of survey - 30, total completed at end of field work - 15) will be connected and as the plant is running to capacity already, immediate requirements at an estimated additional load of 1.5 kwh per house is 45 kwh. A fourth generator had arrived in Rae in September '66. The Hospital has a separate 15 kwh unit for emergency use.

At Lac La Martre a 25 kwh generator, which was set up when the school was built, operates occasionally during the summer and full time during the winter.

E. POTENTIAL FOR WAGE EMPLOYMENT EXPANSION

The greatest obstacle to the expansion of wage employment opportunities at Fort Rae is the attitude of the majority of the population. This is exemplified by the fact that for the housing construction programme under way during the summer of 1966 helpers had to be brought in from outside though there were plenty of idle hands in the settlement and demands for welfare payments were considerable. It also happened repeatedly during the stay of the survey team that representatives of government agencies were approached by local people with requests for jobs accompanied by tales of hardship. It was possible in a few cases to obtain employment for a few men, mainly for line cutting or road work. When informed of the job opportunities, the men in question were effusively grateful but on the morning they were supposed to start on their job did not turn up. Upon checking at their dwellings, it was found that they were still in bed and when reminded of the fact that they were supposed to start work they answered that they had changed their minds and preferred to stay at home. This pattern repeated itself several times through the summer.

For those of the men who sincerely want employment, all efforts should be made to find openings in Yellowknife. Particularly the mines suffer from an acute labour shortage and - as was established by interviews with mine management - are absolutely willing to employ people from Fort Rae. As the mines are, on the other hand, unable to provide housing, it is suggested that a programme be worked out within which the mines provide the employment opportunity and - possibly subsidized - on the job training along the lines of the training programme developed in 1960 for Eskimos at North Rankin Nickel Mines Ltd., and the government provides Indian housing in Yellowknife - possibly on a rent-purchase basis - for the trainees as well as social guidance for the families.

It is felt that any attempt to start secondary industry or major training projects at Fort Rae would be doomed to failure. The pull of the attractions that Yellowknife has to offer would drain away most of the most alert and open-minded younger people that could benefit from a training institution and competent and conscientious workers without whom a secondary industry project could not survive would be subject to overwhelming competitive offers from Yellowknife establishments. Yellowknife is now the regional growth centre and there are no grounds on which any major establishment could afford to locate at Fort Rae under current resource, transport and market size constraints. Yet, Fort Rae is there, its people are no longer self-sufficient on the traditional renewable resource base and are unlikely to become so again in the near future, and few of them at present are eager to move. The answer seems to lie in the opinion of the survey team in a concept of Fort Rae developing into a northern Indian equivalent of St. Petersburg, Florida, that is into a relatively quiet retirement centre where elderly

Indians living on transfer payments can live in familiar surroundings relatively untouched by the troubling upsets they would experience in a growth centre in which younger members of their group are adjusting to rapid social change. Such a solution would indicate concentration on hospital and related social service facilities and would be quite compatible with the development of a handicraft programme and the continuation of the traditional activities that have already been covered as well as with the expansion of tourist facilities in adjacent areas.

F. WELFARE

Welfare payments to Dogrib Indians - mostly those of Fort Rae from September 1965 to August 1966 totalled \$47,570.52 according to data supplied by Mr. G. Johnson who during that period was the Indian agent responsible. This figure breaks down by months as follows:

September	1965	\$ 5,677.50
October		2,179.50
November		3,277.05
December		3,052.51
January	1966	3,205.00
February		5,680.00
March		4,119.00
April		3,824.96
May		3,408.00
June		3,469.00
July		4,796.00
August		<u>4,882.00</u>
Total		\$47,570.52

It must be remembered that this figure represents only direct welfare payments. To assess correctly the magnitude of total welfare payments, at least part of the cost of the winterworks program, which amounted to \$32,000.00 for the period and for payments for assistance in the building of Indian housing, for which ownership was transferred to the men working on it for amounts less than the cost of such housing and which amounted to approximately to \$50,000.00 for Fort Rae, \$3,300.00 for Rae Lake and \$1,800.00 for Hyslop Lake should be included. Treaty receipts, though their effect on the recipients is today similar to that of welfare payments, should however not be included (Appr. \$2,000.00 for the period). No estimate was available on the size of bad debts incurred in any form by local residents. Welfare thus constitutes somewhere between 10 and 15% of total cash income of the tribe; the proportion is probably higher if an estimate of the imputed value of non-cash income were to include an imputed rental value for subsidized housing. If one considers that the bulk of welfare payments is made to residents of Rae while those of the other settlements received very little either directly or indirectly and also have received

comparatively little assistance in form of subsidized housing, it seems reasonable to estimate that for Fort Rae residents welfare payments account for more than 20% of total income while they account for less than 5% of total income for the residents of the other settlements combined.

G. TOURISM

To sum up previous remarks on the subject it must be accepted that Fort Rae itself offers no attractions whatever, though it could play a role as a jumping-off point, accessible by car as well as by plane. Provision of parking, outfitting as well as limited overnight facilities, preferably by businessmen presently active in Rae, should certainly be encouraged. The most suitable lodge locations as mentioned are on Lac La Martre and perhaps on upper Russel Lake. On the whole it appears, however, that for a start the advertising of guided canoe trips of various lengths as suggested earlier, would promise a bigger return to the local economy at much less investment than the erection of lodges.

H. ECHO BAY MINES LTD.

Echo Bay Mines Ltd. has the only active mining operation within Dogrib Territory. The operation lies just north of Port Radium on Great Bear Lake and utilizes the mill as well as the housing facilities of the old uranium operation there of Eldorado Mining and Refining, Co. Ltd. Production started in October 1964 at a rate of 80 to 85 tons per day which gradually went up to 120 to 130 tons per day, mill capacity being 140 tons per day. Echo Bay is Canada's richest silver mine but has also encountered some good copper values and there is increasing speculation that at greater depth recoverable uranium values may be encountered. At the time of the survey the mine was worked through three adit levels but sinking of a vertical 500 ft. internal production shaft from the bottom adit level was being considered. During fiscal 1966 total production was 1,532,002 ozs. of silver and 1,687,670 lbs. of copper from 46,240 tons milled, representing an average recovered grade of 36.8 ozs. of silver and 2.18% copper per ton. In 1967 recovered grade of silver for the first half of the year went up to an average of 75 ozs. per ton. All mine operations are within permafrost. Further geological information has been covered in Chapter 2 F.

At the time of the survey, only one Indian from Northern Alberta was employed at the mine. Labour at the mine is generally short and management expressed willingness to employ local Indians, provided they agreed to come without families. (All miners employed are on single status). Indians from Fort Franklin frequently work on the barges plying between the mine and Great Bear River during the summer. Total employment at the mine is about 75, year round. Though base hourly rates are comparatively low, most men make good monthly wages due to the frequent possibilities of working overtime, the subsidized room and board at the bunkhouse, and, of course, possibilities of

spending money are limited.

A 6 man crew of Indians from Fort Rae was employed for contract logging by the mine for several weeks during the summer and fall of '66. Their earnings were computed as follows:

Small culls	12ft lengths, 6 inch tops	500	at \$ 1.00	\$ 500.00
Logging	16ft lengths, small culls	150	at \$ 0.20	\$ 30.00
Logging	12ft lengths, 3 inch tops	500	at \$ 0.60	\$ 300.00
Logging	16ft lengths, 3 inch tops	2850	at \$ 0.80	\$2,280.00
Unloading timber at mine,	6 men at 19hrs at \$1.50/hr			<u>\$ 171.00</u>
	Total			\$3,281.00

Less: Advance (Arny's General Store)	\$ 125.00
Commissary Purchases	\$ 101.69
2 days board on boat	\$ 60.00
2 boxes 30.30 shells	\$ 12.00
Groceries	<u>\$ 493.00</u>
Total	\$ 792.19

Total final pay \$2,488.81

For this contract, the return flight to and from Fort Rae had been paid by the company. The company charters a Wardair Ltd. Otter twice a week at a rate of 0.72/mile for 548 miles return from Yellowknife or \$394.56 per round trip. Employees coming in pay their own fare of \$50.00 per person, maximum load being 8 persons per trip.

There seems little doubt that some form of rotating mine employment among a number of Fort Rae Indians could be worked out between mine management and the Area Administrator at Fort Rae, perhaps on the basis of a minimum contract of 3 month for each individual, with bonus payments for additional months continuous employment, by which the mine could be assured of a steady source of labour and by which wage income for Fort Rae Indians could be significantly expanded. Currently unutilized wage income potential for the Fort Rae community should be assessed at approximately \$60,000.00 p. a. from this source alone.

CHAPTER 9

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The overriding fact that must govern every consideration of the future of the Dogrib settlements is that Yellowknife is the regional growth centre. Barring any major new mineral developments in the area, it does not appear that any secondary industry developments in any of the Dogrib settlements are likely to have any chance of success. As pointed out earlier, efforts to create wage employment opportunities for Dogrib Indians should be concentrated in Yellowknife, though of course a slight improvement in the ration of native to white employment at Fort Rae is possible particularly if the suggested service functions there are enlarged. Lac La Martre should be viewed largely as a retreat for the traditionally inclined among the Dogrib after the other settlements have been phased out.

The idea of moving the townsite of Fort Rae should certainly be dropped. Not all of the inhabitants would follow, site advantages are very minor. There is no point whatever in this area to end up with one new and one old townsite. In short, the very few uncertain advantages that could be gained bear no relation to the cost of such a move.

It does not appear that any road development in the area can be justified in terms of increasing the local development potential. A case can be made, however, for a road in the context of the general opening up of the North Arm - Great Bear Lake - Coppermine Area to develop its mineral potential in the long run. Such a road should definitely follow the western shore of Marian Lake, continuing around its north shore between it and James Lake and then follow generally the route of the existing winter road as far as Mazenod Lake. From there on a route a little to the east, that is over exposed shield rather than the paleozoic sediments, appears to be preferable from the mineral exploration as well as from the tourist development point of view. Following the eastern shore of Great Bear Lake, such a route would - at the tree-line leave the survey area to reach the Arctic Ocean at Coppermine. Naturally, a detailed route analysis goes far beyond the framework of this survey. However, the preceding route has been suggested as a result of careful consideration of the geographic and economic facets of the area described in the report, as well as of the impressions gained in the course of many overflights and of the field trips. It is considered preferable that such a road should not pass through either Fort Rae or Lac La Martre. It is also felt that in the interest of tourist development such a main route not be taken past Lac La Martre Falls, and that a potential later hydro development of these falls be reached by a branch road from the main route.

There is little doubt that at present the level of income from all sources in relation to expectations is high, in other words, that the level of living equals or even exceeds the standard of living. As long as such a situation persists, the effective labour supply is not going to increase. The term effective labour

supply is used advisedly - in the course of the field work, it became quite apparent that the alleged unemployment among the people of Fort Rae is just that - alleged. One certainly comes across many assertions by local people that they would like to work a little for some more money, but they are in reality not prepared to forego present leisure for the wages appropriate to their worth as labourers under the conditions under which their labour is marketable. To overcome this problem, four ways are open. One is to raise wage rates - this would lower the relative value of leisure, the alternative cost, but would be self-defeating as the employability would decrease sharply, a point that has been developed well in a different local context by Yale Brozen. The next way is to increase the level of education and thus their productivity, which would in turn raise wages. This again does not offer much hope as response to current wage opportunities shows that the main problem now is not Education, but, as Colin Clark would put it, the other two E's - Energy and Enterprise. The third possibility would be to lower unearned income substantially, i. e. welfare payments of all kinds. This would force living level sufficiently below living standards to increase effective labour supply - but this possibility unfortunately appears to be ruled out for political considerations. There remains as the fourth and last - and in the long run likely most effective remedy, to raise expectations, that is the living standard, well above the present level of living by increasing the desire for white status goods. This presupposes of course that the availability of unearned income is not increased. Another term for this solution is of course complete acculturation, and this is likely to be condemned by many romantics. As, however, this is in the opinion of the writers the inevitable consequence of all culture contact between a western capitalist society based on the principle of profit-maximization which is therefore dynamic in character and any other society that is closed and static, as for instance traditional Indian or Eskimo society, emphasis on the goal of complete acculturation in the basic education offered locally offers the best hope for the attainment of long-term economic development objectives. The rigorous proof for this conclusion unfortunately goes beyond the framework of this report.

Concrete suggestions for improvements, which have been touched upon in the body of the report or are implied in more detailed discussion may be summarized, by location, as follows:

Lac La Martre

1. On one of the three islands at approximately $117^{\circ} 47' 30''$ and $63^{\circ} 23' 20''$, on a flat limestone surface slightly overgrown with heather, facing towards the shore and approximately 8 feet above the water line is an excellent location for a fishing lodge. This, it is suggested, should be built as a local project, by a co-operative or community association, following a local design and using local materials.
2. Complete and maintain, as far as possible with local manual labour, the local airstrip to accommodate DC-3 or Javelin - type aircraft.

3. Continue policy of reserving all of Lac La Martre for domestic and sport fishing but expand local fishery on co-operative basis. Complete freezer installation. Restrict production to frozen round and to locally dried and smoked fish to serve markets at Fort Rae and Yellowknife. This co-op should be in all respects separate from the one at Fort Rae. Sale of surplus frozen round whitefish to Edmonton could eventually be considered.
4. Encourage handicraft production for marketing through Fort Rae co-operative, concentrating on small souvenir items such as beadwork, dolls and toys.
5. The extensive peat-moss deposits around NW corner of lake could be utilized for local vegetable gardening.
6. Encourage expansion of trapping activities into currently under-utilized areas to the North and Northwest of the Lake, possibly with the co-operative stimulating construction of a network of line-cabins.

Fort Rae

7. There is no argument for the revival of the project to remove Fort Rae to a new site.
8. Though not part of the survey frame of reference, it must be stressed that the problems of drainage, filling, roadwork and foundations that have been mentioned as a reason for the present dilapidated status of Fort Rae are greatly exaggerated. It is the considered opinion of the author, who has had considerable experience in dealing with northern townsite construction and layout problems, that all these problems can be overcome largely by the judicious application of already available operating and maintenance funds and equipment to turn the present townsite into a quite attractive place.
9. The co-operative should stay out of retailing as well as of fur-buying except for immediate handicraft needs and concentrate on redevelopment of the considerable handicraft potential.
10. Handicrafts should initially concentrate on beaded, costume jewellery type souvenirs, toys and artifacts; when sizing, quality control and marketing have been properly organized, a start should be made on chrome tanned leather items such as moose hide vests, beaded and plain, white caribou leather slippers, beaded and plain, later gloves, Indian style smocks.
11. In the co-op building, a woodworking shop should be established, possibly in connection with a vocational training project, starting on furniture repair and expanding into the making of simple furniture for local needs.

12. Yield of the local fishery can be expanded, it is felt, to cover a much larger percentage of local requirements. As in the case of Lac La Martre, eventual extension of sales to Yellowknife could be considered.
13. Though tourist potential of Fort Rae itself may be considered as non-existent, a case could be made for the establishment of a tourist lodge on upper Russel Lake, the development of an overnight camp ground at La Martre Falls and the organization of fishing, hunting or just photographic trips by canoe as suggested in the body of the report.
14. If any of the tourist activities suggested are to succeed, the establishment of a small motel and efficient and reliable outfitting and guiding services is a necessity.
15. Organized caribou hunts should be discontinued, at least on the present basis which seems to be to see them primarily as a vehicle for perpetuating certain aspects of traditional culture. They can only be justified if organized on a completely commercial basis.
16. Present trapping activities are relatively inefficient. Re-development of local trapping, for which there certainly is room must be based on recognition of its dual function and clearcut separation of these two functions: on the one hand as a full time profession for a very few competent trappers, and on the other as a source of supplemental family income from its pursuit as a hobby.
17. Development of an on-the-job training program at the Giant Mine generally along the principles that worked so well for Eastern Eskimos at North Rankin Nickel Mines Ltd. The following key features should be exhibited by such a program if it is to be successful: Payment of training subsidies to the mine graded according to type of work and progress of individual trainees, integrated into the Mines' incentive bonus system, on the Rankin model. No interference on part of the government in actual training. Provision by the Department of trainee housing, preferably on a rent-purchase basis, in the town of Yellowknife, as well as of services of a mature social worker with a background in home economics for intensive family counselling during the transition period.
18. Little can be suggested in the way of secondary industry development at Fort Rae. As mentioned, the primary problem locally is motivation - the people must first show some willingness to better exploit the already existing possibilities. Of the numerous suggestions which were made locally - all of which are identical with those made at most other small settlements in the Territories - none has a chance of success under present attitudes, the present structure of welfare availability, due to considerations of market size and structure and lastly because of the competition for any skilled and well motivated labour exerted by Yellowknife.

Other Settlements

19. With regard to the other settlements, only holding actions are justified, combined with heavy indirect pressure to relocate at Lac La Martre, Fort Rae or Yellowknife. The housing projects carried over from the previous administration were therefore a mistake. The settlement at the North-East corner of Marian Lake should be relocated as soon as possible, though the one at the North-West corner may have some future as a small satellite community to Fort Rae, particularly if a road is built along the west shore. The Snare Lake settlement, though quite picturesque, has no economic base capable of expansion and neither have Hyslop Lake and Rae Lake. They should be considered as temporary satellite communities with a life expectancy of from 5 to 15 years. Under no circumstances does the construction of schools and any other service facilities in these locations appear justified, expansion of any federal or territorial activity into these villages would only result in the establishment of so many more 'rural slums'.

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APPENDIX "A"FARAUD HOSPITAL - FORT RAEStatement of Statistics
For Years Ending December 31,

	1962	1963	1964	1965
Total Expenses (less depreciation)	\$113,342.08	109,725.88	99,841.16	92,525.39
Total Patient Days	5,010 days	7,314 days	6,663 days	5,647 days
Total Cost per patient day	\$22.62	15.00	14.97	16.39
Salaries				
Nursing	3.99	2.80	2.89	3.50
Special Services	.23	.15	.11	.32
Medical Records	.72	.55	.60	.52
Administration	2.78	2.00	2.03	2.28
Dietary	1.82	1.54	1.75	1.46
Laundry	.55	.41	.41	.47
Linen	.74	.52	.46	.46
Housekeeping	1.12	.59	.44	.48
Plant	1.24	.87	.85	1.16
Maintenance	.59	.33	.35	.41
Total Salaries	13.78	9.76	9.89	11.06
Other Expenses				
Medical & Surgical	.35	.18	.13	.16
Drugs	.58	.44	.46	.24
Nursing	.02	.03	-	-
Special Services	.18	.15	.06	.09
Medical Records	.03	.02	.03	.08
Administration	.58	.36	.28	.31
Dietary	4.05	2.60	2.47	2.77
Laundry	.08	.02	.06	.04
Linen	.29	.04	.06	.04
Housekeeping	.20	.11	.19	.03
Plant Operation	1.49	1.06	1.21	1.46
Plant Maintenance	.99	.23	.13	.11
Total Others	8.84	5.24	5.08	5.33
Total cost per patient day	22.62	15.00	14.97	16.39
Less: Recoveries, dietary and housing	2.19	1.83	1.51	1.49
Cost after recoveries	20.43	13.17	13.46	14.90

APPENDIX "B"Cost Analysis for 1965

	Total Cost	Acute	Special Care at 9.00	Boarders at 6.00
Patient Days	5,647 days	2,119 days	1,762 days	1,766 days
Percentage of total		37.6%	31.2%	31.2%
Salaries				
Nursing services	19,750.44	17,775.44	1,975.00	-
Special services	1,805.00	1,444.00	180.50	180.50
Medical records	2,950.02	2,950.02	-	-
General service depts	38,010.37	14,291.70	11,859.30	11,859.31
Other expenses				
M. & S. & drugs	2,247.78	2,022.78	225.00	-
Special Services	508.57	408.57	50.00	50.00
General service dept.	<u>27,253.21</u>	<u>10,247.33</u>	<u>8,502.94</u>	<u>8,502.94</u>
Total Expense	92,525.39	49,139.90	22,792.75	20,592.75
Less: O/P revenue	3,137.95	2,510.35	313.80	313.80
Recoveries, dietary, housing	8,430.03	3,169.69	9,630.17	9,630.17
Differential charges	122.50	122.50	-	-
Treatments	621.60	-	471.60	150.00
	12,312.08	5,802.54	3,415.57	3,093.97
Net Cost	80,213.31	43,337.36	19,377.17	17,498.78
Cost per patient	4.20	20.45	11.00	9.91

Actual Income for 1965

	Acute	Special Care	Boarders
As per form HS - 2	42,514.50	15,858.00	11,661.00
Less: Rejects	333.00		
Expense Allocation	49,181.50	15,858.00	11,661.00
	43,337.36	19,377.17	17,498.78
Deficit	1,155.86	3,519.17	5,837.78
Total Deficit		10,512.81	
Add:		239.07	
Deficit for year		10,751.88	

APPENDIX "C"

An account of the situation of the Dogrib people, as seen by a local Indian.

"The Dogrib people of Fort Rae are, at first sight, not as far advanced as the Indians of the South or of other parts of the Northwest Territories. Though the community is located close to the largest white settlement in the Northwest Territories the members of the community have been little affected by the promimity of white society. Many of the people still maintain a traditional way of life of hunting, trapping and fishing. They seem to have built around themselves a protective shield that has caused them to be described as the most primitive Indian tribe in Canada. They have not only managed to keep the whites from denting this protective shield but also members of their own tribe who have turned white on them or who have had a little education.

The current situation at Fort Rae in my opinion is this: The Indians are satisfied living the way they are. They are quite contented and happy. Why not? Whenever they have a problem, it can usually be solved for them without any strain, brainwracking or backbreaking work on their part. Then there are the whites in the community who are not doing anything to improve the situation. Everyone is attending his own little business that he is supposed to be doing. Soon these whites form their own little cliques. Conflicts start developing and soon the situation is hopeless. The whites in this community, small as their number is, unconsciously suppress all attempts that are being made to help the situation of the Dogrib people here in Rae, whether these attempts are being made by one of their own or by one of the Indians. They have no contacts whatever with the Indians outside of their work. The prejudice, ignorance and downright rudeness of some of them is so plain you could cut it with a knife. I see no hope of improving this situation unles in this community some whites are added, subtracted or changed for there is definitely a necessity for their presence but the people could do well without some of them.

The Dogrib people who have been most affected by white society are the young and a good many of them are no longer here. Very few still remain and this is sad because they could have brought about a solution to the plight of the Dogrib people of Rae. However this situation exists in most rural communities everywhere. There is absolutely nothing here for the young people after they have had a little schooling and they in turn do not feel in any way obligated to help their own people because they have not been made to realize that they are needed. A possible solution might be to start some of the young people in Community Development or in some type of social work among their own people. But this is just a suggestion for the future. On the whole, a solution that might help the whole community, would be an economic venture that could provide permanent employment. This could be an additional source of income to the handicraft centre. I am very happy with the handicraft centre but it is not enough. I feel that once an economic venture has been undertaken and gradually taken over by the local people, it would start a chain reaction of other economic ventures and bring about a realization of the need for education. Education in this sense has

to be taken indirectly. By this I mean an education that will bring about in the people responsibility and pride in what they have accomplished and what they hope to accomplish. Education should include better ways of hunting, trapping and fishing, of handling money and of handling the affairs of the community. Most of the children are attending school and the opportunities that exist even for the young people who have dropped out or who have only had a little education are unlimited, if they only knew about them. For the aging and those who are out of trainable age, I think it would do them a world of good if they could be included in any economic projects, trained as far as possible and participate in gradually taking it over. This I think would start them on the right track and make them come to the realization that they have a future to live and look forward to. This change will not necessarily mean that they have to become 'White Indians' for the trappers, hunters and fishermen are professionals in their own right. A change in their own community will help them keep their own identity and yet still be looked upon by the average Canadian or American as first class citizens with as much potential for achieving what anyone of them can do. At present I see no future for the Dogrib people here at Rae. For me they are just existing like vegetables with no future to look forward to. The only economic projects that could be started in the foreseeable future would be something in the line of fishing and the promotion of the tourist industry.

With the knowledge I have gained by working in Community Development and with the Area Economic Survey this summer, I am sure I will see a change in Rae in a few years. However, this will take time but I think it will be a good start on getting the Dogrib people here at Rae on to the right track of becoming first class Canadian citizens. "

The above comments were written by Miss Georgina Blondin, who worked for some time as an assistant for the Area Economic Survey in gathering demographic data and helping with interviews. At the end of the field work she had, due to her own Indian background, gained an excellent picture of local attitudes towards problems of economic development as seen by local Indians. She was asked to prepare some comments in her own words. It was thought worthwhile to include them in Appendix form without further comment, particularly in view of the fact that it is very difficult to find any Dogrib at Rae who can express themselves and the ideas prevalent among their own people in fluent English.

